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TO HIS MAJESTY
KING GUSTAF VI ADOLF
THIS VOLUME IS LOYALLY DEDICATED
ON THE OCCASION OF HIS
80TH BIRTHDAY

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SOME CHARACTERISTICS OF THE YIN ART

BY

BERNHARD KARLGREN

I

GENERAL SURVEY

In the present paper¹⁾ the characterization of the Yin (and the epigonus early Chou) art will be based on the ritual bronze vessels, which constitute by far the most comprehensive and richly varied exponents of the archaic Chinese art.

¹⁾ Abbreviations in this paper: Ackerman = Phyllis Ackerman, *Ritual Bronzes of Ancient China*, 1945. Antiques = *Collection of Chinese Bronze Antiques*, Tokyo 1910. BMFEA = *Bulletin of the Museum of Far Eastern Antiquities*, Stockholm (Bulletins 6, 8, 9, 20, 21, 24, 30-32). Burchard = L. Reidemeister, *Chinesische Kunst* I, II, 1935. (Auction catalogues from Burchard and Co.). Chengsung = Lo Chen-yü, *Cheng sung t'ang ki kin t'u*, 1935. Ch'ian = Li T'ai-fen, *Ch'i an ts'ang kin*, 1940. Chicago = C. F. Kelley and Ch'en Meng-chia, *Chinese Bronzes from the Buckingham Collection*, the Art Institute of Chicago, 1946. Cull = W. P. Yetts, *The Cull Chinese Bronzes*, 1939. Dubosc = J. P. Dubosc, *Mostra d'Arte Cinese / Exhibition of Chinese Art*, 1954. Eumorfopoulos = *The George Eumorfopoulos Collection Catalogue of the Chinese and Korean Bronzes . . .* by W. P. Yetts, 1, 2, 1929, 1930. Exhibition = *The Chinese Exhibition, a Commemorative Catalogue of the International Exhibition of Chinese Art*, London 1936. Freer = *Freer Gallery of Art, a Descriptive and Illustrative Catalogue of Bronzes acquired during the Administration of J. E. Lodge*, 1946. Hakkaku = Hakkaku (Hakuzuru) *kikkin shü*, 1934. Heusden = Willem van Heusden, *Ancient Chinese Bronzes of the Shang and Chou Dynasties, an Illustrated Catalogue of the van Heusden Collection*, 1952. Ill. Cat. = *Illustrated Catalogue of Chinese Government Exhibits for the International Exhibition of Chinese Art in London*, 1936. Jung = Jung Keng, *Shang Chou yi k'i t'ung k'ao*, 1941. Kanan = S. Umehara, *Kanan Anyō ihō*, *Selected Ancient Treasures found at An-yang, Yin sites*, 1940. Kidder = J. E. Kidder, Jr., *Early Chinese Bronzes in the City Art Museum of St. Louis*, 1956. Kobijutsu = *Shina kobijutsu zufu*, 1918. Koop = A. J. Koop, *Early Chinese Bronzes*, 1924. Kwankarō = S. Umehara, *Kwankarō kikkin zu*, 1947. Lochow = Gustav Ecke, *Sammlung Lochow, Chinesische Bronzen*, 1943. Loo 1939 = J. L. Davidson, *An Exhibition of Chinese Bronzes*, C. T. Loo and Co., 1939. Loo 1940 = J. M. Menzies, *An Exhibition of Ancient Chinese Ritual Bronzes loaned by C. T. Loo and Co.*, 1940. Mengwei = Lo Chen-yü, *Meng wei ts'ao t'ang ki kin t'u*, 1917. Mengwei sū = Id., *Sü pien* 1918. Menten = A. Salmony, *Sammlung J. F. H. Menten, Chinesische Grabfunde und Bronzen*, 1948. Mizuno = S. Mizuno, *Bronzes and Jades of Ancient China*, 1959. Nedzu = S. Umehara, *Seizansō seishō*, vol. VI, 1942. Palmgren = *Selected Chinese Antiquities from the Collection of Gustaf Adolf, Crown Prince of Sweden*, 1948. Paoyün = Jung Keng, *Pao yün lou yi k'i t'u lu*, 1929. Pillsbury = B. Karlgren, *A Catalogue of the Chinese Bronzes in the Alfred F. Pillsbury Collection*, 1952. Seikwa = S. Umehara, *Shina kodō seikwa or Selected Relics of Ancient Chinese Bronzes from Collections in Europe and America*, 1933. Seligman

The student of archaeology and art history who comes uninitiated to the study of the archaic Chinese ritual bronzes at first gets an almost shocking impression of the enormous richness and variety in this field, as evinced by the materials offered by publications and by public and private collections. And yet we have so far seen only the beginning. It has only comparatively recently come about that the Chinese have dared to open the graves of their ancestors. Nonetheless, during the past decades, through regular excavations, quasi-excavations and grave robberies, nearly every year has brought to light new and startling types of vessels and décors.

When, in 1935, from Chinese linguistics and history I came (via the archaic inscriptions) to take an interest in the bronze art of Yin, Chou and Han, I realized from the very outset that it would serve no useful purpose to place before me two or three — or ten — beautiful specimens, to admire their patina, appreciate the sharpness and precision of the casting, fall into raptures over the powerful T'aot'ie figures or the delicate bird designs, and then sit down and dilate in writing on the aesthetic gifts of the ancient Chinese bronze masters, their creative power and the perfection of their technique, nor did I feel competent to state that this vessel is forceful and perfect and "must be early, from the acme of the great Yin art, probably 13th c. B. C.", whereas this other vessel is somewhat weaker in its profile, slacker in the design, not so precise in the casting, and "must be considerably later, probably 11th or 10th c. B. C." On the contrary, it seemed evident that in this field, as in every field of research, it was necessary to bring together a really comprehensive material for study, in order to make possible comparison, classification. Fortunately there were already then at the student's disposal numerous publications on Chinese ritual vessels (many more have been published subsequently) which — together with photographs from various public and private collections — made it possible to examine many hundreds of vessels from the archaic period. When this principle had been followed, one was at first somewhat bewildered. To start with, there seemed to be an abundance of features

= S. H. Hansford, *The Seligman Collection of Oriental Art*, I. 1957. Senoku = K. Hamada, *Senoku seishō*, 2nd ed. 1924. Shant'u = Jung Keng, *Shan chai yi k'i t'u lu*, 1936. Shierkia = Shang Ch'eng-tsu, *Shi er kia ki kin t'u lu*, 1935. Shuang kien ki kin = Yü Sing-wu, *Shuang kien yi ki kin t'u lu*, 1934. Shuangkien k'iwu = Yü Sing-wu, *Shuang kien yi ku k'i wu t'u lu*, 1940. Shūkan = Shūkan ihō, *Selected Relics of Han and pre-Han Dynasties*, 1932. Si Ts'ing sh'yi = Jung Keng, *Si Ts'ing yi k'i sh' yi*, 1940. Sungchai = Jung Keng, *Sung chai ki kin t'u lu*, 1933. Sungchai sū = Jung Keng, *Sung chai ki kin sū lu*, 1936. Sūn = Sun Hai-po, *Sūn hien yi k'i*, 1937. Tch'ou = Tch'ou Tō-yi, *Bronzes antiques de la Chine*, 1924. Trautmann = Gustav Ecke, *Frühe chinesische Bronzen aus der Sammlung Oskar Trautmann*, 1939. Tsun = Huang Sūn, *Tsun ku chai so kien ki kin t'u*, 1936. Visser = H. F. E. Visser, *Asiatic Art in private collections of Holland and Belgium*, 1947. Voretzsch = E. A. Voretzsch, *Altchinesische Bronzen*, 1924. Waterbury = Florance Waterbury, *Early Chinese Symbols and Literature: Vestiges and Speculations*, 1942. White = W. C. White, *Bronze Culture of Ancient China*, 1956. Wuying = Jung Keng, *Wu ying tien yi k'i t'u lu*, 1934. Yechung I = Huang Sūn, *Ye chung p'ien yü ch'u tsi*, 1935. Yechung II = Huang Sūn, *Ye chung p'ien yü er tsi*, 1937. Yechung III = Huang Sūn, *Ye chung p'ien yü san tsi*, 1943. Yen'ku = Liang Shang-ch'un, *Yen k'u ki kin t'u lu*, 1943.

which interchanged freely in a kaleidoscopic jumble: you found T'aot'ie ogres, sometimes with dragon bodies, sometimes only masks, sometimes disjointed, sometimes so dissolved into a muddle of lines that they were hardly discernible to the inexperienced eye. Sometimes this dissolved bodied T'aot'ie was compressed into a narrow band at the neck of a vessel ("Animal triple band"). You found Cicadas, either in horizontal rows in narrow neck-belts or applied to "Hanging blades". You found dragons of a great many varieties and placed in a great many positions. You found Bird figures, sometimes with the long tail detached. You found Circle bands, Compound lozenges, Vertical ribs, etc. These various themes seemed to be juggled quite freely into various schemes of arrangement. Sometimes a large T'aot'ie filled up the entire surface of the vessel's "belly". Sometimes it was crowned with a neck-belt having its own décor (Dragons, Cicadas, Whorl-circles etc.). Sometimes the belly was bare except for such a narrow figured neck-belt. Sometimes the bowl of the vessel was strictly hemispherical, sometimes it had an S profile. Sometimes the straight cylindrical legs (of Ting and Li-ting) were bare, sometimes they had incised décor figures, sometimes they had plastic animals' heads at the top. Sometimes the decorated surfaces on the belly were divided, by more or less stout vertical flanges, into four or more panels; sometimes not. In short, in the rich store of paraphernalia of shapes, décor schemes and décor elements, the Yin artist appeared to have browsed absolutely free and unhampered, combining any of these elements with any of the others.

But when you had handled the comprehensive materials for some time, the pieces of the puzzle began to form a pattern.

In the first place, you learned to distinguish between standard-type vessels and individualized vessels. There were, to begin with, a long series of ever-reverting classes of vessel: Ting, Li-ting, Kuei, Yu, Tsun, Ku, Chī, Hu, Kia, Tsüe etc. Scores and scores of vessels were unequivocally attributed to one or other of these classes. But once in a while a vessel appeared that was a hybrid between two (or more) regular vessel classes: it was irregular, atypical. Again, within a vessel class, for instance the Ting, it was quite feasible to distinguish several sub-categories, characterized by differences in shape, arrangement of the décor and elements of the décor. Each such sub-category proved to be represented by a great many specimens, sometimes many scores — they were the regular, normal categories. But here again there cropped up, not so very frequently but sufficiently often to deserve serious attention, specimens that broke away from the rules of the "normal" sub-categories just established: they were irregular, atypical. These atypical specimens (irregular in shape or décor) are what I call "individualized vessels".

Two examples will suffice to show the meaning of this distinction. Pl. 1 a shows a Square Yi (Pillsbury collection, Minneapolis Museum) with a quite normal décor arrangement: a T'aot'ie in the central field, figured neck-belt and foot-belt; but the figures in the latter are elephants of a quite unique

configuration, and the animals in the neck-belt are likewise quite exceptional in shape. On the other hand, Pl. 1 b shows a vessel in the MFEA which is fundamentally a Li tripod but has a whole series of unusual features: the crudely drawn snake in the neck-belt, the small T'aot'ie (eyes, quill-adorned double bodies) between the horns of the principal one, the strongly protruding and down-hanging mouth of the big T'aot'ie, the exceptionally high relief (cf. BMFEA 20, Pl. 4).

Such "individualized" vessels, which do not follow the rules of the great majority of specimens — these latter comprising some 80—90 percent of the total number — but which show more or less aberrant, sometimes eccentric features, have had a particularly strong attraction for Western collectors (museums or private collectors): it is great fun to own something unusual or even unique.¹⁾ But to the archaeologist and historian the first and most important task must be to ascertain which are the predominant, regular, normal types and which are their decisive criteria.

A first survey of a large material carried out more than 25 years ago convinced me that the archaic (Yin and early Chou) standard-type vessels, judged by their décor only, fell into two large style groups: the A-style vessels and the B-style vessels, as demonstrated in detail in an extensive paper.²⁾ Recently, I have again taken up a thorough examination of the standard-type categories within a series of predominant classes of vessels: Round Ting, Li-ting, Kuei, Yu, Square Ting, Tsun, Ku, Chi.³⁾

In this investigation, when not only the décor but also the vessel shapes and accessories were taken into account, some highly surprising results were obtained, to which I shall presently revert below.

In the first place, however, the distinction between the A and B styles was amply corroborated. The facts in this case will be summed up here.

The criteria established in 1937 were the following: A-style décor elements: the coherent (not dissolved) T'aot'ie (Pls. 2 a, 4 a, 7 a); the Cicada (Pls. 2 a, 5 a); the Vertical dragon (Pl. 2 a) and the Uni-décor (i. e. the décor on the belly extending up to the rim, with no separate, figured neck-belt, Pls. 13 b, 65 a, b). B-style décor elements: the Dissolved T'aot'ie (Pls. 10 a, 12 a, 28 a); Animal triple band (i. e. a Dissolved T'aot'ie confined in a narrow belt or band, Pls. 4 b, 29 a); De-tailed bird (Pls. 3 b, 6 b); Circle band (Pl. 6 a); Squares with crescents (Pl. 73 a); Compound lozenges (Pls. 6 a, 66 a, b); Spikes (Pl.

¹⁾ See, for instance, Umehara's *Shina kodō seikwa*, Pls. 12, 17, 21, 30, 43, 63, 71, 103, 104, 120; Pillsbury, Pls. 4, 9, 20, 29, 33, 40, 53; Freer, Pls. 5, 13, 28. Mizuno, Pls. 2, 6, 7, 10, 11, 17, 25, 31, 50, 83, 99, 110 etc. And, of course, the numerous vessels in the shape of animals: elephants, rams, owls etc. cannot be brought into the standard-type categories — they vary freely and infinitely in shape and décor.

²⁾ Bernhard Karlgren, *New Studies on Chinese Bronzes*, BMFEA 9, 1937.

³⁾ Bernhard Karlgren, *Marginalia on some Bronze Albums*, BMFEA 31, 1959; *Marginalia on some Bronze Albums II*, BMFEA 32, 1960.

66 a, b); Interlocked T's (Pls. 58 b, 72 b); Vertical ribs (Pl. 2 b); Eyed spiral band (Pl. 2 b); Eyed band with diagonals (Pls. 26 b, 27 a).

The decisive point in regard to these décor elements was the fact that, as a rule (isolated exceptions did of course occur), A-style elements and B-style elements were not combined on the same vessel: the A motifs were freely combined in the décor scheme of a vessel, and the B motifs were likewise frequently mixed on one and the same vessel, but there was a gulf between the two groups that was almost never bridged over.

In the said paper I adduced 157 vessels (of various classes) on which two or more A-style elements (as described above) were combined on the same vessel, and 148 vessels on which two or more B-style motifs were combined; but I had found only 9 cases in which A and B elements occurred on the same vessel.

Two examples may suffice here:

The Li-ting in Pl. 2 a (formerly Oppenheim coll.) shows a combination of T'aot'ie, Vertical dragon and Cicada (all A-style features); the Kuei in Pl. 2 b (coll. of H. M. the King of Sweden) has a combination of Vertical ribs, Eyed spiral band and Animal triple band (all B-style features).

The thesis advanced by me in 1937 was based on conclusions drawn from décor elements only. In my *Marginalia* articles, where other features as well, shapes of vessel, accessories, décor arrangement, have been taken into account, new facts were adduced which strongly corroborate the distinction between the A style and the B style. Some of them will be cited below:

I. For vessels characterized by a more or less hemispherical bowl: Round Ting (except the Ting with supporting animals), Li-ting, Kuei, I drew a diagram (Marg. I: 293) showing four different shapes of the bowl, which I repeat here:

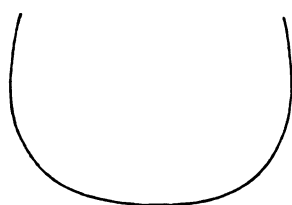
Let us call them: α , C-profiled bowl, β , S-profiled bowl, γ , broad-bottomed bowl (the bottom broadened out and somewhat flat, the sides straighter than in α and sloping slightly inwards), and δ chalice-shaped bowl.

We now find that among Round Ting vessels with the A-style décor elements (T'aot'ie, Uni-décor etc. as above) a considerable category has the second, the S-profiled bowl, for instance Pl. 3 a (Marg. I, p. 294), the vessels with the B-style décor elements (Dissolved T'aot'ie, Animal triple band, Detailed bird etc. as above) practically never have this shape (a few exceptions indicated *loc. cit.*).

On the other hand, Round Ting vessels with the B-style décor elements frequently have the broad-bottomed bowl (γ) (Marg. I, p. 294), those with the A-style décor elements hardly ever have this shape. Example: Pl. 3 b (= Mengwei, shang 7).

Thus a definite contrast on two important points between the A and B styles.

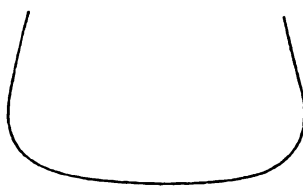
II. In the Round Ting class there are a great many specimens which have a bare belly and a figured neck-belt. Those with the A-style décor in the belt



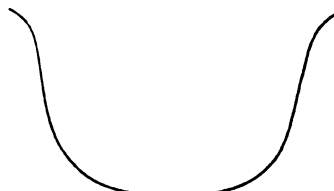
α



β



γ



δ

(Bodied T'aot'ie), a considerable group, regularly have plastic heads on the upper part of the legs (Marg. I, p. 299). Example: Pl. 4 a (= Paoyün 21). Those with the B-style décor in the belt, for instance Animal triple band, have bare legs, never plastic heads (Marg. I, p. 300). Example: Pl. 4 b (= Paoyün 18).

Here again, a definite contrast between the A and B styles.

III. In the Round Ting class there is a considerable group of vessels which, below a neck-belt, have Hanging blades on the belly. In nearly all the cases these have the A-style element Cicada on the blade; in the neck-belt there are either the A-style element T'aot'ie or "neutral elements" (such as Dragons etc.). Example: Pl. 5 a (Kunstindustrimuseum, Copenhagen) (Marg. I, p. 299). On the contrary, the scores of vessels which in the neck-belt have B-style elements (Animal triple bands, De-tailed birds etc. as defined above) never have Hanging blades on the belly.

Here again a definite contrast between the A and B styles.

IV. In the Eared Kuei, Earless Kuei, Yu and Chi classes there are large categories having a décor arrangement with a bare belly below a figured neck-belt. In many scores of instances belonging to these categories the neck-belt has B-style elements (Animal triple band, De-tailed bird, Squares with crescents, Circle bands etc., as defined above); but there are never A-style elements (T'aot'ie, Cicadas). Thus in these classes the arrangement with a bare belly is confined to the B-style.

In a large part of the said bare-bellied vessels belonging to these four classes the foot-belt is likewise bare (non-figured), a contributing feature in these

B-style groups. Examples: 5 b (= Shierkia 6: 6); 6 a (MFEA); 6 b (= Antiques Pl. 10).

Here again, a definite contrast between the A and B styles.

V. In the Square Ting class a considerable category of vessels showing the A-style décor elements on the body (Uni-décor, T'aot'ie, Vertical dragons), have incised Hanging blades on the upper part of the legs. On vessels with the B-style décor elements this is so rare as to be exceptional (Marg. II, p. 7). Example: Pl. 7 a (Brundage collection).

Thus a clear contrast between the A and B styles.

VI. In the Tsun (ordinary Round Tsun as well as Shouldered Tsun) and Ku classes there are very large categories with A-style décor elements which have Rising blades on the tall neck. In the same classes of vessel there are important categories which have B-style décor elements, but these categories as a rule have bare necks; the instances of Rising blades there are rare, indeed quite exceptional (Marg. II, p. 20). Examples:

A. Pl. 7 b (Nelson Gallery); Pl. 8 a (Higginson coll.); Pl. 8 b (Cleveland Museum); Pl. 9 a, Pl. 9 b.

B. Pl. 10 a; Pl. 10 b (Röhss Museum).

Here again, a striking contrast between the A and B styles.

VII. In the Ku class there are large categories which have the A-style décor elements. Among these categories there is a rich sub-category which has double décor belts on the foot: one lower belt, fairly broad, as a rule showing T'aot'ie, and one upper belt with animal figures: Cicadas, Snakes, Birds, Dragons (especially Trunked dragons). To this there is nothing corresponding in the large categories with B-style décor elements (mostly Dissolved T'aot'ie and Circle bands) — there the foot has only one décor belt (Marg. II, p. 21).

Examples:

A. Pl. 9 a, b.

B. Pl. 10 b.

Here again, a definite contrast between the A and B styles.

VIII. In the Chi class there is a large category of vessels with a boldly flaring mouth. None of them have the A style décor elements, many have B elements, particularly the De-tailed bird (to the B-style elements should be added the Tail-raising bird; Marg. II p. 24). Examples:

A. Pl. 11 a (Vannotti coll.);

B. Pl. 11 b (Univ. Museum Philadelphia); Pl. 6 b.

Here again, a marked contrast between the A and B styles.

IX. In the same Chi class, the various sub-categories with A-style décor elements mostly have Flanges but not Free animal's heads; the sub-categories with B-style décor elements as a rule have no Flanges but regularly Free animal's heads (Marg. II, p. 24). Examples:

A. Pl. 11 a;

B. Pls. 11 b, 6 b.

Here again, a clear contrast between the A and B styles,

X. In the tall Kia class, the arrangement with only one décor belt is quite exceptional with the A-style décor elements. On vessels with B-style décor elements, on the contrary, it is quite common, in fact, one of the regular features. Examples: Pls. 33 b, 34 a, b.

Here again, a definite contrast between the A and B styles,

XI. In the tall Kia class there are considerable sub-categories with A-style décor elements which have Phallic knobs on the uprights. In the sub-categories with B-style décor elements this kind of knob hardly exists (there the Mamma-shaped knob is the rule). Examples:

A. Pls. 30 a, b;

B, Pl. 33 a, b.

Here again a definite contrast between the A and B styles.

XII. In the Tsüe class a large sub-category with A-style décor elements has Rising blades above the neck-belt and extending to the under side of the spout and the wing. In the sub-categories with B-style décor elements such Rising blades do not exist. Examples:

A. Pls. 39, 40.

B. Pl. 44 a.

Here again a definite contrast between the A and B styles.

XIII. In the Hu class, on vessels with A-style décor elements, the predominant arrangement is a decorated belly crowned with one or several neck-belts. Vessels with B-style décor elements extremely seldom have any décor at all on the belly, the bare belly with a figured neck-belt being the rule. Examples:

A. Pl. 51 a, b;

B. Pls. 54 b, 60 a, b.

Here again a definite contrast between the A and B styles.

XIV. Finally a distinction of a more general kind. It may seem unnatural that in one class of vessel after another there are specimens both with the A-style décor and with the B-style décor — there are Round Ting having the C-profiled bowl both with A-style and B-style décor, there are Kuei having S-profiled bowl both with A-style and B-style décor, there are Tsun of the same shape in both A- and B-style, likewise Ku, and so on. Was there really a full equipment of both A-decorated and B-decorated specimens in every class, with no difference in shape (except the few we have adduced under points I and VIII above)? The superficial observer may get that impression when skimming through the albums of Chinese ritual bronzes.

In reality matters are quite different, as is shown by the examination in our *Marginalia I—III*:

In two large classes there are as a rule only vessels with A-style décor elements, vessels with B elements being quite exceptional. These are the Li-ting (*Marg. I*, p. 295) and Square Yi (see *Ch. II* below).

In two other classes there are only vessels with B-style décor elements, as a rule none with A-style elements (since we have to disregard their plastically adorned bulging lower parts). These are the Hien and the Li (see *Ch. II* below).

In other words: the A style had no Hien nor Li, the B style had neither Li-ting nor Square Yi — a rule with very few exceptions.

To sum up: all the arguments brought forward by me in 1937, confirmed by the materials in later publications and collections, to the effect that the exceedingly motley materials presented by the ritual bronzes of Yin (and early Chou) could be divided, as a first step, into two principal groups: the A-style products and the B-style products, have been amply substantiated by the facts adduced under I—XIV above.

But this was, after all, but a first step in the classification.¹⁾ Each principal group, taken by itself, still appeared to present an infinite variety of shapes, décor arrangements and décor motifs, and an unlimited freedom in combining these various elements. Was there really such an unbounded liberty of creative variations? If so, it would seem futile to try to establish any classification whatsoever within each of the said two principal styles.

As an example we may choose the commonest A-style décor element, the T'aot'ie ogre. We find it sometimes fashioned as the Bodied T'aot'ie, e. g. Pls. 4 a, 7 a, with one body going out to the right and another to the left, thus two Dragons combining to form a T'aot'ie; sometimes it is merely a Mask T'aot'ie, without body, as in Pls. 2 a, 7 b, 8 b, 15 a, b; again it may be a Disjointed T'aot'ie, the body, though still quite evidently forming part of the ogre, detached and stylized in the curious manner in Pls. 19 b, 65 a, 77 a. Sometimes the entire principal surface of a vessel, up to the very rim, is occupied by a large T'aot'ie figure (what I have called Uni-décor), sometimes the ogre is surmounted by a more or less broad neck-belt with other figures (Dragons, Cicadas, Birds etc., Pl. 7 a). Sometimes the T'aot'ie has an incurving upper lip (Pl. 7 a), sometimes an outcurving (Pl. 7 b). Sometimes its forehead is adorned with a simple Bow-line (Pls. 52 a, 65 b), sometimes with a kind of Shield, which may occasionally have single hooks (Pls. 15 b, 17 a, 64 a), sometimes double hooks (Pls. 19 b, 73 b). Sometimes it has horns in the shape of a standing S or a standing C (Pls. 11 a, 17 a), sometimes a recumbent S (Pl. 20 b), sometimes (and most frequently) a recumbent C (Pls. 2 a, 7 a); but sometimes the latter may be quite bare (Pls. 65 a, 69 a), sometimes have a décor of Scales (Pl. 2 a) or of Consecutive hooks (Pl. 64 b) or of a Bottom torus (Pl. 68 b) or of a Single hook (Pls. 64 a, 65 b). Again, the T'aot'ie may have a stout vertical Flange forming the central part of the face (Pl. 2 a, 7 a), in other specimens not (Pl. 15 a).

Indeed, all the classes of vessel in A style are susceptible of having and, in fact, do have categories characterized by T'aot'ie figures as leading décor features with some of these details or others. The round and bulging "bellies" of the Round Ting, the Li-ting, the Kuei and the Yu, for instance, are quite similar to each other in that they are all equally well suited for a T'aot'ie

¹⁾ I still mean the archaeological classification, not the aesthetic evaluation of artistic beauty.

décor. Do we then find that the T'aot'ie in all its variants just described adorns them all indiscriminately — the one or the other variant as the whim of the artist has happened to decide, now the one, now the other, from vessel to vessel, be it a Ting, a Li-ting, a Kuei or a Yu?

Let us, on the other hand, take up some of the most important B-style elements which are suitable for adorning the round and bulging bellies of the said classes of vessel, Round Ting, Li-ting, Kuei and Yu. There are the Vertical ribs (Pl. 2 b), there are the Compound lozenges (Pl. 66 a, b) and there are the Spikes (Pl. 66 b). Have the Yin B-style artists applied them indiscriminately to the bellies of Ting, of Li-ting, of Kuei, of Yu, just as fancy has taken them?

The principal achievement in my short articles *Marginalia I* and *II* was to show that actually there was no such freedom or arbitrariness. On the contrary, the artists were bound very strictly by an amazing series of conventional rules in selecting their shapes, their arrangements of décor and their décor elements. In fact, the Yin art at its apogee, such as we know it from hundreds and hundreds of ritual vessels, was sophisticated and conventionalized in the extreme, working in the straight-jacket of a system of rigid laws. The latter part of the present article, treating of classes of vessel (Square Yi, Hien, Li, Kia, Tsüe, Hu) not examined before, confirms this conclusion.

We shall now, in order to illustrate this constraint of a rigid system, give as examples some comparisons between classes of vessel that have fundamental features in common. We shall, in the first place, compare the Round Ting (though leaving out the Ting with supporting animals) and the Li-ting.

The Ting has various features which have no counterparts in the Li-ting class, for instance, a sub-category having plastic heads on the upper part of the legs. On the other hand, the Li-ting in its turn has quite a few features unknown in the Ting class, for instance a sub-category having Mask T'aot'ie on the belly. A number of such contrasts will be most conveniently summed up in a table (all the conclusive materials having been given in the *Marginalia*). A plus (+) means the existence of the feature in question in a considerable group within the class. A minus (—) means absence, total or nearly total (but for stray exceptional instances) within the class.

	Ting	Li-ting
a. S-profiled bowl (Pl. 3 a)	+	—
b. Broad-bottomed bowl (Pl. 3 b)	+	—
c. Plastic heads on the legs (Pl. 4 a)	+	—
d. Bare belly and neck-belt with Bodied T'aot'ie (Pl. 4 a)	+	—
e. Hanging blades with Cicadas on the belly (Pl. 5 a)	+	—
f. Incised blades on the legs of vessels which have Uni-décor on the belly (Pl. 64 a)	+	—
g. Uni-décor surmounted by a narrow band with Spirals (Pl. 64 b)	—	+

	Ting	Li-ting
h. Cicadas and T'aot'ie combined on the same vessel (Pl. 2 a)	—	+
i. Mask T'aot'ie on the belly (Pls. 2 a, 64 b)	—	+
j. Disjointed T'aot'ie on the belly (Pl. 65 a)	—	+
k. T'aot'ie with Scale-shaped ears (Pl. 64 b)	—	+
l. T'aot'ie without Flanges (Pl. 65 a)	—	+
m. T'aot'ie with Scaled horns (Pl. 2 a), or Consecutive hooks on horns (Pl. 64 b), or Bare recumbent C horns (Pl. 65 a)	—	+

Briefly, in regard to shapes, accessories and above all to décor schemes and details there is a gulf between the Ting and the Li-ting, in spite of the fact that to a superficial observer they appear to be so closely akin that they have mostly been indiscriminately lumped together under the heading "Ting" (Umehara [Seikwa, Kwankarō], Ecke [Lochow, Trautmann], Kidder, Hansford [Seligman], Yetts [Cull], Jung Keng etc.), whereas only a few conscientious writers have duly kept them apart (Heusden, Visser, Waterbury).

These facts are, indeed, highly curious. The vessel types Ting and Li-ting are so very similar, that one would expect an analogous treatment both of décor arrangements and of décor details. If the Ting could have a large category (e. above) showing Hanging blades with Cicadas on the belly, why could not the Li-ting? If the Li-ting could have T'aot'ie and Cicada combined on one and the same vessel (h), why could not the Ting? And so on. The contrasts between the two classes of vessel are apparently not motivated by any practical reasons or functions. They are inexplicable in themselves. Judged by the conditions in An-yang times they are purely conventional, and their origin must go back to a pre-An-yang period unknown to us.

In the second place, we compare the Round Ting and the Eared Kuei, both of which have more or less hemispherical bowls as their principal feature. The comparison gives a result which proves the existence of a most amazing set of rules and prohibitions (we give here a selection only, several more can be culled from Marginalia I).

	Ting	Kuei
a. C-profiled bowl (Pl 4 a)	+	—
b. Bare belly and neck-belt with Bodied T'aot'ie (Pl. 4 a)	+	—
c. Hanging blades with Cicadas (Pl. 5 a)	+	—
d. Cicadas (Pl. 5 a)	+	—
e. Stout Flanges (Pl. 64 a)	+	—
f. Bow-line on T'aot'ie's forehead (Pl. 65 b)	+	—
g. Single-hooked horn on Bodied T'aot'ie (Pls. 64 a, 65 b)	+	—
h. Broad-bottomed bowl (Pl. 3 b)	+	—
i. Flat circles instead of spikes in centre of Compound lozenges (Pl. 66 a)	+	—
j. S-profiled bowl on vessels with B-style décor (Pl. 2 b)	—	+

	Ting	Kuei
k. Chalice-shaped bowl (Pl. 66 b)	—	+
l. Large Loop dragons on belly (Pl. 67 a)	—	+
m. Rising blades above neck-belt (Pl. 67 b)	—	+
n. Vertical ribs (Pls. 2 b, 68 a)	—	+
o. Disjointed T'aot'ie (Pl. 68 b)	—	+
p. Thin or no Flanges on vessels with A-style décor (Pl. 67 a, b)	—	+
q. Double-hooked Shield on forehead of T'aot'ie (Pls. 67 a, 68 b)	—	+
r. Recumbent C horn on T'aot'ie with bottom torus (Pl. 68 b) or bare (Pl. 69 a)	—	+
s. Tori flanking the T'aot'ie nose (Pl. 68 b)	—	+
t. Bare background on figured belly (Pls. 67 b, 68 b)	—	+
u. Head-turning Dragon in belt (Pls. 67 b, 68 a)	—	+
v. Squares with crescents (Pl. 68 a)	—	+

Here again we witness curious rules for which no practical reasons can be found. When in most of its categories the Ting had a C-profiled bowl, why could not the Kuei have it (for two exceptional instances see Marg. I, Pl. 61)? — in the Middle-Chou style C-profiled Kuei vessels were exceedingly common. When the Cicada was a favoured A-style element in the décor of the Ting, why could it not be used to advantage on Kuei vessels as well? When Chalice-shaped bowls were common in the Kuei class, why could they not also occur in the Ting class (observe that, on the contrary, the small class "Ting with supporting animals" often had the Chalice-shaped bowl, e. g. Trautmann, Pl. 5.) When Vertical ribs were a standard element on the B-style Kuei, why could they not serve equally well on some of the hundreds of Ting with a B-style décor? And so forth, all through the 22 points just recorded. There is no rational explanation, we simply have to state that the conventional rules demanded that this code of prescriptions was followed.

Since this sophistication and conventionalism of the high Yin art is a phenomenon of paramount importance for the understanding of its character, we continue with some more comparisons of the same kind. Let us examine the Eared Kuei and the Earless Kuei, apparently but two variants of the same vessel class, distinguished only by a trivial detail, the existence of an "ear" (handle).

	Eared Kuei	Earless Kuei
a. Uni-décor (Pl. 68 b)	+	—
b. Bare background on figured belly Pls. 67 b, 68 b)	+	—
c. Large Loop dragons on belly (Pl. 67 a)	+	—
d. Double-hooked Shield on forehead of T'aot'ie (Pls. 67 a, 68 b)	+	—
e. Tori flanking the T'aot'ie's nose (Pl. 68 b)	+	—

	Eared Kuei	Earless Kuei
f. Recumbent C-horn on T'aot'ie with bottom torus (Pl. 68 b) or bare (Pl. 69 a)	+	—
g. Whorl circle in belt (Pl. 68 a)	+	—
h. Head-turning dragon in belt (Pls. 67 b, 68 a)	+	—
i. Square with crescents in belt (Pl. 68 a)	+	—
j. Vertical ribs (Pls. 2 b, 68 a)	+	—
k. Tail-raising birds on belly (Pl. 69 b)	+	—
l. Rising blades on vessels with B-style décor (Pl. 70 a)	—	+
m. Compound lozenges in neck-belt (Pl. 70 b)	—	+
n. Stout Flanges (Pl. 71 a)	—	+
o. Recumbent single-hooked C-horn on T'aot'ie (Pl. 71 a)	—	+

We have witnessed here a most astonishing series of conventional contrasts between two so closely kindred classes of vessel.

Let us now further compare the Eared Kuei and the Yu, both of which have bulging bellies above a ring foot.

	Eared Kuei	Yu
a. S-profiled bowl (Pls. 67 a, b, 68 a, b)	+	—
b. Chalice-shaped bowl (Pl. 66 b)	+	—
c. Uni-décor (Pl. 68 b)	+	—
d. Large Loop dragons on belly (Pl. 67 a)	+	—
e. S-shaped horn on T'aot'ie (Pl. 67 b)	+	—
f. Double-hooked Shield on forehead of T'aot'ie (Pl. 68 b)	+	—
g. Tori flanking the T'aot'ie's nose (Pl. 68 b)	+	—
h. Compound lozenges on belly (Pl. 66 b)	+	—
i. Whorl circle in belt (Pl. 68 a)	+	—
j. Head-turning dragon in belt (Pls. 67 b, 68 a)	+	—
k. Square with crescents in belt (Pl. 68 a)	+	—
l. C-profiled bowl (Pls. 6 a, 71 b)	—	+
m. Broad-bottomed bowl (Pl. 72 a)	—	+
n. Bow-line on T'aot'ie's forehead (Pl. 72 a)	—	+
o. Out-curving mouth on T'aot'ie (Pl. 72 a)	—	+
p. Compound lozenges in neck-belt (Pl. 6 a)	—	+
q. Interlocked T's on belly (Pl. 72 b)	—	+

Again, a series of purely conventional restrictions.

The Tsun and Ku classes are so similar, superficially judged, that it might seem tempting to describe the Tsun as a stout Ku or the Ku as a slender Tsun. However, a closer scrutiny reveals, here as in the preceding groups, that there are some remarkable contrasts:

	Tsun	Ku
a. Square with crescents on bulb (Pl. 73 a)	+	—
b. Double-hooked Shield (Pl. 73 b)	+	—
c. Bulb having centre bare, framed in by narrow upper and lower décor bands (Pl. 74 a)	+	—
d. Cicadas (Pl. 9 a)	—	+
e. Snakes (Pl. 9 b)	—	+
f. Trunked dragons (Pl. 9 b)	—	+
g. Double décor belts on foot (Pl. 9 a, b)	—	+
h. Figures in relief covered with spirals identical with those of the background (Pl. 74 b)	—	+

The last point — an interesting feature — requires an explanation. The surfaces of T'aot'ie, Dragons etc. in relief are seldom bare, but their adornment with incised lines (very often "Double-hooked quills" or derivatives from that motif, see BMFEA 23, 1951, p. 39) is as a rule different from and stands out against the spiral pattern of the background. A remarkable deviation from this practice is when the surfaces instead are filled with a spiral pattern identical or very nearly identical with that of the background; the effect is to soften the contrast, to "dissimulate" the décor theme and make it to some extent melt together with the background. This technique, practically unknown in many classes of vessel — Ting, Li-ting, Yu, Tsun, Square Ting — crops up sporadically in some other classes, and is particularly common in the Ku and Tsüe classes. Examples:

Ku: Pl. 9 a; BMFEA 30, Pl. 7; Pillsbury Pl. 37; Palmgren Pls. 3, 101; Cull Pl. 9; Freer Pl. 10; Chicago Pl. 12; Visser Pl. 3; Trautmann Pl. 12; Lochow I, Pl. 17; Lochow II, Pl. 2; Kidder Pl. 2; Waterbury Pls. 28, 43; Seikwa Pl. 53. Tsüe: BMFEA 30, Pl. 9; Pillsbury Pl. 17; Freer Pl. 3; Lochow II, Pl. 3; White Pl. 53; Senoku Pls. 78, 79; Yen'k'u, shang Pls. 29, 30.

Square Yi: Pls. 14 a, 19 a, b, 20 b; Eumorfopoulos I, Pl. 15; Waterbury Pl. 10; Mizuno Pl. 61.

Eared Kuei: Marginalia I Pl. 7 b; Mizuno Pl. 27.

Earless Kuei Marginalia I Pl. 30; Freer Pl. 9.

P'ou: Pl. 79 a; Antiques Pl. 7.

Kia: Freer Pl. 1.

Lei: Chicago Pl. 9.

The Tsun and Chi classes are so closely akin that some variants of the Chi have often been called Tsun in earlier works; the principal difference is that the Chi has a foot like a Tsun, but a "bulb" that is not set off against the neck but merges smoothly into the latter (Marg. II: 21). There are, however, some other curious contrasts:

	Tsun	Chi
a. Uni-décor with Owl (Pl. 75 a)	—	+
b. Double neck-belts (Pl. 75 b)	—	+
c. Free animal's heads (Pl. 6 b)	—	+
d. Tail-raising birds (Pl. 11 b)	—	+

As a further example we shall examine the Round Ting and the Square Ting, two classes which have so much in common that they are generally brought together under the heading "Ting". We shall limit the examples to such as have A-style décor elements:

	Round Ting	Square Ting
a. Cicadas (Pl. 5 a)	+	+
b. Bare body, and neck-belt with Bodied T'aot'ie (Pl. 4 a)	+	—
c. Bare legs (Pls. 5 a, 76 a)	+	—
d. Bow-line on T'aot'ie's forehead (Pl. 65 b)	+	—
e. Whorl-circle in belt (Pl. 76 a)	+	—
f. Plastic heads on legs of vessels with T'aot'ie on belly (Pl. 76 b)	—	+
g. Mask T'aot'ie or Disjointed T'aot'ie on body (Pls. 76 b, 77 a)	—	+
h. Double-hooked shield on forehead of T'aot'ie (Pl. 77 b)	—	+
i. "C-hooked quill" border on T'aot'ie's horn (Pl. 77 b)	—	+
j. Double-toothed Flanges (Pl. 76 b)	—	+

Even such kindred classes as the Square Ting in A style and the Square Yi (with straight sides), which offer quite analogous square, flat surfaces for the artist's décor work, evince two striking differences:

	Square Ting	Square Yi
a. Uni-décor (Pl. 76 b)	+	—
d. Trunked dragons forming horns of T'aot'ie (Pl. 14 a)	—	+

In our Marginalia I, II and III (III being the last chapter in the present article) we have attempted a classification of the sub-categories in a series of leading classes of vessels: Round Ting, Li-ting, Eared Kuei, Earless Kuei, Yu, Square Ting, Tsun, Ku, Chi, Square Yi, Hien, Li, Tall Kia, Broad Kia, Tsüe and Hu. There are still some classes remaining, but they are represented by comparatively few specimens in known collections and therefore lend themselves less well to such a classification: In fact, they tell us little more than the classes already analysed. There are Kûe (Pl. 78 a), closely akin to the Tsüe; Ting with supporting animals (Pl. 78 b); P'ou (Pl. 79 a), Lei

(Pl. 79 b), Ho (Pl. 80 a). Besides these there are the so-called "Kuang" (Pl. 80 b), which have much in common with the highly disparate and freely varied vessels in the shape of animals in the round: birds, particularly owls, elephants, tigers, rams etc. Though these animal-shaped specimens happen to be made of bronze, and for the décor of their surfaces draw largely upon the patterns of both the A style and the B style, they can only indirectly be coördinated with the regular classes of vessel studied above: they belong, together with creations in jade, stone and ceramics, to the fascinating field of the sculpture of the Yin era. We have not tried to force them into some place within the system of the ordinary ritual vessels.

The analysis carried out in the preceding pages served two purposes: On the one hand, it gave an extensive confirmation of the division into two principal styles (A and B); on the other hand, it gave a resumé of that conventionalism which had established fixed rules for the shapes, the décor arrangements and the décor elements and details pertaining to each class of vessel, and the complicated system of contrasts and prohibitions resulting therefrom.

This double analysis might give the impression that the archaic ritual bronzes constituted an extremely heterogeneous world of art products. But curiously enough this is not so. There is a remarkable homogeneity in this extensive and richly varied material from the point of view of some essential principles.

In the first place, the archaic bronze art was, as has often been pointed out, an art that exclusively worked with animal motifs, never with motifs from the vegetable kingdom. In the B style there are, it is true, a few motifs which are not of animal origin: the Vertical ribs, the Interlocked T's, the Compound lozenges, the Spikes, but those are certainly no plant motifs either. Even the Square with crescents derives, through a violent, gradual corruption, from a dragon motif, as has been shown by me in various papers.¹⁾

The only theme that remains wholly unexplained is, in fact, the Whorl circle.

In the second place, all through the bronze art studied here, there is never any asymmetry, no vivid scenes, no free movements of the animals depicted. In the realm of the A-style there is an ever-recurring fundamental arrangement which, though not the only one, yet is nevertheless quite predominant all through the many classes of vessel under discussion. On the square vessels each side has its symmetrically arranged scheme, as a rule one and the same (or else with small variations) on all four sides. In most cases, each side is divided into two panels by a central vertical flange; these two panels are then combined in the décor so that the central flange forms the middle line of the décor scheme. On the round vessels the surface is divided, by vertical flanges

¹⁾ Pillsbury pp. 36, 63, 66, and BMFEA 30, pp. 192, 193.

or simple dividing lines, into two or four (or sometimes more) panels. Each such panel may form a décor field by itself, but generally two panels are combined so that the flange (or dividing line) between them comes to form the central line in a scheme extending over them both — thus in principle quite analogous to the arrangement of the square vessels just described. Within the panel or double-panel the décor surface, either as a whole (Uni-décor) or a broader or narrower horizontal belt of it, has a central figure, for instance a T'aot'ie (in narrow belts sometimes only the forehead Shield of a T'aot'ie), either flanked or not by accessory figures, Dragons, Birds etc., which always confront each other in the strictest symmetry.

In the A style the background is either bare or, mostly, covered with a very discreet, low and fine-lined relief pattern of spirals (round or squared) — always the same; there are never elaborate and elegant background patterns of other kinds, as in the later Huai style (especially on mirrors). The principal décor is in the great majority of cases formed by relief into more or less broad surfaces and narrower bands; only when there are additional border embellishments (such as C-hooked quills on the borders of T'aot'ie horns or bodies, e. g. Pl. 77 b) are there two planes of relief, the border adornments being in a lower relief plane than the principal décor. The surfaces of the raised principal décor figures are sometimes bare but generally adorned with incised figures, mostly variations of C-hooked quill figures (being short-forms for “dragon”, see BMFEA 23, 1951)¹⁾.

In the B style the said décor scheme of the A style can still be traced in a simplified form, mainly in the neck-belts and foot-belts. The division into panels is, in principle, the same, though not emphasized by stout flanges on the principal surface but only by tiny raised lines (rudimentary flanges) in the belts. It is, moreover, suggested, for instance on Kuei vessels, by accessories: the vertical handles (“ears”), alternating with Free animal's heads, divide the surface of the vessel into four sections, corresponding to the panels of the A style.

In the third place, there is a principle obtaining in all the series of classes that have a large, rounded belly (Round Ting, Li-ting, Eared Kuei, Earless Kuei, Yu, Chī, Broad Kia, Hu) or a large square body (Square Ting, Square Yi), according to which the neck section must never be undecorated.²⁾ Thus, there are three possible schemes:

1. Uni-décor, the motif on the principal surface extending to the immediate vicinity of the rim;

¹⁾ Sporadically we find another kind of relief technique: the motifs are expressed in thread relief, with the bare background visible between the threads, e. g. Seikwa Pl. 6, Mengwei sū Pl. 27. Such stray cases are rare indeed. On small bronzes, on the contrary, this technique is quite common — could there have been some kind of filling between the thin thread-lines?

²⁾ Unless, of course, the vessel as a whole is entirely undecorated, as is often the case — in the present article we are dealing exclusively with decorated vessels.

2. A decorated principal surface, above which is a neck-belt with its own décor, so close to the rim that, at most, some small Rising blades can sometimes be squeezed in above the belt;

3. A bare principal surface, above which is a neck-belt with its own décor.

But we never find a decorated belly and, above it, a bare neck, in the said classes. This principle is observed both on vessels with an A style décor and on those with a B style décor.

In the fourth place, the intimate connection between all the classes of both styles is emphasized by a series of "neutral" elements which constitute constantly recurring paraphernalia of the bronze décor and which appear in various classes of both A style and B style vessels: Dragons of several kinds, Whorl circles, Snakes, Birds, Rising blades, plastic heads on the legs, animals in the round on the handles of Kuei and Yu vessels, tripartite bulging lower parts with animal shapes in the Hien and Li classes, tall, pointed, elegantly out-curving legs, as well as Phallic and Mamma-shaped knobs in the Kia and Tsüe classes.

There is thus an all-pervading unity on several fundamental points — in spite of the many distinctions and contrasts defined above — throughout the realm of the archaic ritual bronze vessels: a store of décor elements entirely based on the animal kingdom; a stiff arrangement with confronting figures symmetrically arranged round a central feature; an invariable rule about the decorated neck zone; and a series of "neutral" décor features belonging to various classes of both styles.

II

MARGINALIA ON SOME BRONZE ALBUMS

Square Yi

The Square Yi is not a very common type, and judged from the specimens known so far it is fairly homogeneous in type: it would seem to be a model of a house (a granary?) with stout vertical flanges at the four corners and in the middle of the flat surfaces, a slanting roof and a knob at the top in the shape of a miniature roof.

The most important fact is that the Square Yi nearly always has the A-style décor — in this respect forming a parallel to the Li-ting. This is highly remarkable, since the flat, square surfaces would lend themselves admirably to the surface-filling décor elements of the B style: Compound lozenges, Spikes, Interlocked T's, Vertical ribs. It is all the more curious since it stands in

striking contrast to another principal vessel type with similar flat surfaces, the Square Ting. The latter has a large class of vessels in pure B style, frequently with the central field adorned with Interlocked T's, and a great many specimens with Spikes. (Marg. II). The Square Yi specimens with B-style features are quite exceptional; we cite four such rare cases: Pl. 12 a (= Yechung III: 22, now in Alsdorf coll. Chicago) with Dissolved T'aot'ie in the principal field; Pl. 12 b (Oeder coll.) bare central field and a neck-belt with Dragons framed in by Circle bands; and Seikwa Pl. 43, showing vertical ribs in the central field and some weird projections and toothed flanges revealing a Chou date. A fourth vessel, Pl. 13 a (Kidder Pl. 5) has a décor arrangement reminiscent of 12 b, and Dissolved dragons in the belts, likewise a B-style product. Observe that 12 a, b and 13 a have either no Flanges at all, or only very thin ones.

Unlike the Square Ting class, which has an important category with Uni-décor: large T'aot'ie reaching to the rim (Marg. II: Pls. 1, 2), the Uni-décor is quite exceptional in the Square Yi; an example in Pl. 13 b (the bare background and the flanking Tori on the forehead are likewise exceptional — features belonging to the Eared Kuei class).

The principal types are the following:

Type 1. Yi with straight sides, the central field showing large T'aot'ie, often flanked by Vertical dragons, figured neck-belt and foot-belt; the figures are T'aot'ie, Dragons of various kinds, Birds, but never Cicadas or Whorl circles — in this respect according with Square Ting but unlike Round Ting and Li-ting.

The formation of the T'aot'ie is of particular interest. Just as in the Square Ting class and the Li-ting, we find here both Bodied T'aot'ie, Mask T'aot'ie and Disjointed T'aot'ie — Round Ting had only the first, Kuei and Yu the first two but not the third. But whereas all those classes of vessel in most cases had T'aot'ie with Recumbent C horns, less often Standing C horns or Recumbent S horns (Yu not even these), we find the S horn predominant in the Square Yi class, and, a particularly remarkable feature, this Recumbent S horn has in most cases been transformed into a Trunked dragon with Bottle horns. Nothing corresponding to this has been found in any of the vessel classes studied so far in our Marginalia.

Mask T'aot'ie:

With Dragon horns and Vertical dragons: Pl. 14 a (Wessén coll.); the same in Eumorfopoulos I: 15; Ill. Cat. p. 584; Li Chi: The Beginnings of Chinese Civilization Pl. 6; Seligman, Frontispiece.

With Dragon's horns: Pl. 14 b; Pl. 15 a (= Trautmann Pl. 8); Pl. 15 b (C. T. Loo).

With Recumbent C horns: Pl. 16 a (C. T. Loo); Pl. 16 b (Sedgwick coll.); Hakkaku Pl. 20; vessel in Albright coll.; also our Pl. 1 a.

Bodied T'aot'ie:

With Standing C horns: Pl. 17 a (= Lochow II: 13); Pl. 17 b (Ernest Erickson coll.); Pl. 18 a (Cull coll.).

With Recumbent C horns: Pl. 18 b (= Waterbury Pl. 4); White, Pl. 16; vessel in Cincinnati Museum.

Disjointed T'aot'ie:

With Dragon's horns: Pl. 19 a (Metropolitan Museum New York); Pl. 19 b (Bluett); vessel in Freer Gallery.

With Recumbent C horns: Pl. 20 a.

With Recumbent S horns: Pl. 20 b.

Type 2. Yi with central part slightly out-curving. The Unidécor is here so rare as to be exceptional: Pl. 13 b, Mask T'aot'ie; further an Owl in Seikwa Pl. 44.

The normal type is T'aot'ie in the central field, figured neck-belt and foot-belt, thus closely agreeing with type 1 above.

Bodied T'aot'ie:

Pl. 21 a (Nelson Gallery); Chicago Pl. 24; Nedzu Pl. 18; Freer Pl. 21 (with flanges broken through into tooth-like projections, an Early Chou feature); Senoku I: Pl. 27 (here De-tailed birds in the neck-belt — admixture of a B-style feature).

Mask T'aot'ie:

Pl. 21 b (Museum of Fine Arts Boston) (with the cut-through flanges turned into Bird shapes); Pl. 22 a with Vertical dragons (Mrs. Chr. Holmes coll.).

Disjointed T'aot'ie: Pl. 22 b (Brundage coll.) (with double neck-belts, the upper sloping inwards).

The most curious difference between types 1 and 2 is that the latter never has the S horns of the T'aot'ie transformed into Trunked dragons, as on type 1. We mostly find Recumbent C horns with C-hooked quill border, a type of horn which we have earlier met with in the Square Ting class (but not, for instance, in the Ting, Li-ting, Kuei and Yu classes).

Hien

The Hien class is fundamentally a Li tripod below, with a bowl applied on top.

The lower part has the three bulging compartments characteristic of the Li, and since these lend themselves admirably to a more plastic adornment than the surfaces of the other classes of vessel, they are regularly fashioned into more or less free-sculptured animal's heads. These heads have much in common with the T'aot'ie, but they always have the nearly straight pointed bovine horns, which are comparatively rare in the T'aot'ie décor on surfaces. These sculptured heads do not, of course, range the vessels into any of the

principal styles — it is common, for instance, for the handles of Kuei vessels to have vividly sculptured animals or animal's heads quite irrespective of the style of décor on the surface of the vessels.

The upper part, the bowl, thus goes its own way, in regard to décor formation, quite irrespective of the T'aot'ie-like heads on the lower part. Many specimens have no décor at all on the bowl, or else only two raised parallel lines round the neck. But the Hien that are decorated regularly have the décor elements of the B style, never those of the A style. There are two types:

Type 1. Bare belly, neck-belt with B-style features:

With animal triple band (= Dissolved T'aot'ie): Pl. 23 a; the same in Seikwa Pl. 98, Koop Pl. 20, Mengwei sü 9, Paoyün 39, Shïerkia V: 20, Tsun 2: 24, Senoku 13, Shant'u 51, Kwankarō, shang 44, Loo 1940 Pl. 10, White Pl. 65, Ackerman Pl. 28, Ill. Cat. p. 17, vessels in Mus. Fine Arts, Boston, O. Roberts coll., Zürich Museum, etc.

With animal triple band framed in by Circle bands: Payoün 38, Tsun 2: 25.

With De-tailed birds: Pl. 23 b (MFEA).

With Dragonized T'aot'ie: Pl. 24 a (= Pillsbury Pl. 11).

With S dragons: Senoku I: 14.

Type 2. Belly with Hanging blades, figured neck-belt: Pl. 24 b (Young Museum), on the Blades Dissolved T'aot'ie. A similar vessel in Cheng ts'iu kuan ki kin t'u 11.

Li

The Li tripod, a primitive type with its roots in prehistoric ceramics, has, as principal part, the three bulky hollow upper parts of the legs, outwardly appearing as three rounded protruding compartments. Under the Hien class above it was already stated that these protruding parts were particularly well adapted for a representation in plastic form of animal's heads, these latter normally being some kind of T'aot'ie, yet of a more pronounced bovine type than the mostly current T'aot'ie versions. As already stated (under Hien), these animal's heads do not attribute the vessel to any particular style (A or B), being analogous to accessories of other classes of vessel such as the ears of the Kuei etc.

Type 1. It should be observed, first, that a considerable number of Li have no décor at all in the neck-belt which usually crowns the said bulky compartments (for an exceptional case in which the animal's face on the latter reaches to the rim see Pl. 62 a). Such Li, sometimes with pointed legs, range from stiff and stern to highly elegant and weak specimens.

Examples: Pl. 25 a (MFEA); Pl. 25 b (Albright Gallery, Buffalo). Further: Visser Pl. 1, Kwankarō, shang 12, Tsun 2: 20, BMFEA 9, Pl. 7; Vessels in collections Brundage, Gump, C. T. Loo, etc.

Type 2. When there is a real décor, along with the more or less plastic animal's heads on the bulging legs, that is, in the neck-belt, the décor elements are always those of the B style, mostly Animal triple band, or else strongly

dissolved Dragons or Eyed band with diagonals etc., never the Bodied T'aot'ie or the Cicadas so common in the closely kindred classes Round Ting and Li-ting.

Examples: Pl. 26 a (= Mizuno Pl. 90); Pl. 26 b (MFEA); Exhibition Pl. 1: 258; Seikwa Pl. 95; Koop Pl. 2; Shūkan Pl. 13. Sometimes the heads on the legs are violently reduced, e. g. Pl. 27 a (C. T. Loo); 27 b (Seattle Art Museum).

Type 3. In a third group, the heads on the bulging legs have been replaced by regular B-style Dissolved T'aot'ie: Pl. 28 a; Pl. 28 b (Mus. Cernuschi); Eumorfopoulos I: Pl. 2; vessel in MFEA.

Type 4. A large group has the bulging legs bare, and the décor of the neck-belt always consists of B-style features (Animal triple band, Eyed band with diagonals etc.) or simple spirals.

Examples: Pl. 29 a (MFEA); Pl. 29 b (Bluett); Sungchai 6; Chengsung, shang 26; Ill. Cat. 1; Voretzsch 39; Wuying 37; Seligman Pl. 7; Kwankarō, shang 40, etc. Occasionally the Li has been provided with uprights, like a Kia, and a side handle, Pl. 29 b (for an eccentric specimen, which is likewise a Li with uprights, see Lochow II: Pl. 9).

Tall Kia

By "tall" I mean that the body of the vessel is more high than broad; the Tall Kia has an entirely or at least approximately flat bottom. There are two kinds of top knobs on the uprights. One is somewhat "bobbin"-shaped, in fact of phallic origin, see BMFEA 14, 1942; the other, flat-bottomed and rounded on top, often with a "nipple", is probably meant to be a counterpart to the former; we shall call it Mamma-shaped. The legs of the Tall Kia, and likewise of the Broad Kia described in the next section, are the pointed legs characteristic of the large Tsüe class, thus constituting a close affinity between these classes. Such pointed legs are very rare in the Ting and Li-ting classes. For a Ting with pointed legs belonging to H. M. the King of Sweden see Palmgren Pl. 1.

A style

Type 1. The principal surface is divided into two broad horizontal belts, each with A-style décor elements: mostly Bodied T'aot'ie, sometimes flanked by Vertical dragons. The animals are often strongly stylized, well on their way to being Dragonized or even Dissolved T'aot'ie. Above there are Rising blades. The knobs are Phallic-shaped. On the legs there are incised Hanging blades.

Examples: Pl. 30 a (= Freer Pl. 4); Pl. 30 b (= Chicago Pl. 8); BMFEA 20, Pl. 9 (MFEA); Nedzu Pl. 9; Seikwa Pl. 67; Yechung III, shang 35; Lochow I, Pl. 19; Lochow II, Pl. 3 (here an admixture of a B element, Square with crescents, in the upper belt); vessels in Mus. Fine Arts Boston, etc.

Type 2. The belts and their décor the same as in the preceding group,

but no Rising blades, nor Hanging blades on the legs; mostly different knobs. Examples:

Mamma-shaped knobs: Pl. 31 a (Röhss Museum); Heusden Pl. 1; Shūkan Pl. 24; Paoyün 116; vessels in the Kleykamp coll. and in the Ueno Museum. In rare instances only one belt: Pl. 31 b.

Phallic knobs: Mizuno Pl. 33; Kanan Pl. 49. (An eccentric vessel in Senoku 88 has the lower part of the body in a Li shape and curiously formed birds on the uprights).

B style

Type 3. The same general arrangement as under 1. above: two horizontal décor belts, but no Rising blades nor Hanging blades on the legs; Mamma-shaped knobs. Examples:

With Dissolved T'aot'ie: Pl. 32 a (C. T. Loo); Li Chi, *The Beginnings of Chinese Civilization* Pl. 46; Seikwa Pl. 69 (this one with birds on the uprights).

With Animal triple band: Pl. 32 b; a quite similar specimen Kidder Pl. 12; Pl. 33 a (MFEA) the belts here framed in by Circle bands; vessel in the Museum of Fine Arts Boston; Kōkogaku Taikei 6, Figs. 1 and 6 (both vessels in the Shanghai Museum) with Circle bands around upper belt only.

Type 4. Décor belt on lower part only, no Rising blades nor Hanging blades on the legs. Mamma-shaped knobs. Examples:

With Dissolved T'aot'ie: Pl. 33 b (coll. of H. M. the King of Sweden); Pl. 34 a (Gump coll.); Zeitschr. f. Ethnol. 1927, Jaekel Abb. 7 (with Circle bands).

Type 5. Décor belt on upper part only; no Rising blades nor Hanging blades on the legs; Mamma-shaped knobs:

With Animal triple band and Circle bands: Pl. 34 b (Röhss Museum);

Without Circle bands: White Pl. 81; Heusden Pl. 3.

Pl. 62 b is like the preceding, but has three large Whorl circles, incised, on the lower part.

Broad Kia

The Broad Kia has a stout, rounded body, closely reminiscent of that of the Kuei, like the latter mostly with an S profile; but it is sometimes broadened out so that the rim forms an oval (sometimes even a square).

A curious contrast between this type of Kia and the Tall Kia described above is this: whereas our Broad Kia has the same two types of knobs described there — the Phallic knob and the Mamma-shaped knob — it has, in a large sub-category, a third type: the Roof-shaped knob which we found to be the regular one in the Yi class.

A style

Type 1. The most common type has T'aot'ie (Bodied, Mask or Disjointed,) either flanked or not flanked by Vertical dragons or other animal figures on

the belly; above this a figured neck-belt; above this again Rising blades; Phallic knobs (sometimes made square); often but not always Hanging blades on the legs.

Examples: Pl. 35 a (Sommerville coll.); Pl. 35 b (= Pillsbury Pl. 15); Freer Pl. 1; Pillsbury Pls. 12, 14; Ackerman Pl. 19; K'ao ku hüe pao 7 (1954) Pl. 15 (two vessels); Senoku II: 87; Yechung I: 21.

The same but for Mamma-shaped knobs: Pl. 36 a (Academia Sinica), the T'aot'ie well on its way to becoming Dissolved. The same but for Roof-shaped knobs: Pl. 36 b; further: Waterbury Pl. 73 (Nelson Gallery of Art).

Type 2. Belly décor like the preceding, but no Rising blades and no Hanging blades on the legs:

With Mamma-shaped knobs: Pl. 37 a (= Hakkaku Pl. 18); BMFEA 9 Pl. 26; Chicago Pl. 5.

With Roof-shaped knobs: Pl. 37 b (= Visser Pl. 7) vessel in the Vignier coll.

A specimen in the Albright Art Gallery Buffalo (Consten, *Das alte China* Pl. 28) has the body very nearly square and Hanging blades on the legs.

B style

Specimens clearly documenting themselves as B-style products are quite rare in this class in contrast to what we found in the Tall Kia class. There are, however — besides some exceptional cases of a B-style décor, here Dissolved T'aot'ie covering the belly — a certain number of vessels with a bare belly and a figured neck-belt, the latter never having A-style elements but "neutral" ones (Dragons etc.). This latter arrangement of the décor always indicates B style in the large Kuei class (Kuei with bare belly never have A-style décor features, but regularly B-style elements in the neck-belt), and, since there is a strong analogy precisely between the Kuei and Kia classes (the latter having a bowl closely akin to that of the former), we should conclude that these few Kia with a bare belly belong to the B-style class. Examples:

Belly covered with Dissolved T'aot'ie: Pl. 38 a.

Belly bare, figured neck-belt:

With Phallic knobs: 38 b (here no Rising blades; Fogg Museum); Seikwa Pl. 70 (here Rising blades);

With Mamma-shaped knobs: Pl. 39 a (no rising blades, curiously dissolved Cicadas in the neck-belt).

Tsüe

The Tsüe class is the largest of all the archaic types. There are hundreds of specimens in Chinese, Japanese and Western collections; we can register here only a few examples of the leading sub-categories.

The Tsüe has strong affinities with the preceding Broad Kia class, but also important differences. There are, for instance, as a rule no Hanging blades on the legs (a few isolated exceptions do occur, e. g. Seikwa I Pl. 5), not even in the large groups with Rising blades in the neck region — in the Kia class

the former was regularly combined with the latter. Again, the Tsüe has the two principal types of knobs on the uprights already studied under Kia: the Phallic knob and the Mamma-shaped knob (they both occur in the A and the B style alike), but it practically never has the Roof-shaped knob, which characterizes an important group of the Broad Kia (one stray exception, a Tsüe showing this kind of knob, in Mizuno, P. 37).

A style

Type 1. We have here first vessels with A-style décor elements, in this case always a real T'aot'ie (Bodied, Mask or Disjointed), either flanked or not flanked by Vertical dragons in a broad belt on the belly, surmounted by Rising blades; these latter are prolonged under the spout and the wing, and sometimes these drawn-out blades are filled with some extra figure, Dragon or Snake. In most cases there are Flanges. This category is very large, good specimens are to be found in a great many collections and publications.

Examples: Pl. 39 b (= Shuang kien ki kin 38); Pl. 40 a (MFEA; Vertical dragons); Pl. 40 b (Hardt coll.; Dragon under spout); Pl. 41 a (MFEA; Vertical dragons); further: BMFEA 30, Pl. 9 (Wessén coll.); Freer Pl. 3; Ackerman Pl. 24; Koop Pl. 17; Heusden Pl. 5; Kidder Pl. 11; White Pls. 2, 53; Yechung III, 48; Shūkan Pl. 23; Seikwa Pl. 57; Mengwei, Sü 29; Chengsung, chung 19, 23, 26; Senoku 75—78; Lochow II: 3 (on this specimen admixture of a B element in a neck-belt: Squares with crescents); and many more.

In some cases the T'aot'ie is well on the way to becoming a Dissolved T'aot'ie (B style); for such a hybrid vessel see Pl. 41 b; a similar case for instance in Pillsbury Pl. 17.

Type 2. A much smaller category has the same A-style décor on the belly, but no Rising blades above it; in this respect it agrees, as we shall see, with the B-style categories, and, in fact, in our present group we seldom find any really forceful, unadulterated T'aot'ie (such as Pl. 39 b above); the T'aot'ie is mostly simplified, but it is still clearly discernible: not really dissolved, as in the B-style class, but on the way to becoming so.

Example: Pl. 42 a (= Shuang Kien ki kin, shang 42); Pl. 42 b (= Shierkia 7: 13); Pl. 43 a. Further: White Pl. 100; Visser Pl. 8; Mengwei, shang 45, 48; Yechung II, shang 27; Yenku'u, shang 38; Senoku 79.

In the A style and in the present group without Rising blades I would place the vessel in Pl. 43 b (MFEA) because of its forceful and high relief in the formation of the bird whose crest at the same time is the horn of a T'aoti'e — a unique specimen.

B style

Type 3. A considerable category has the B-style element Dissolved T'aot'ie in a broad belt, sometimes framed-in by Circle bands, which covers the major part of the belly. There are no Rising blades here.

Examples: Pl. 44 a; Pl. 44 b (= Yechung II, shang 30); Pl. 45 a (= Shuang-kien ki kin, shang 40); Further: Trautmann 15; Yechung II, shang 32; Yen'ku, shang 39; Shant'u 152, Shierkia 4: 20; Chengsung, chung 14, 15, 22.

In the broad belt we sometimes find the T'aot'ie-Dragon distorted in the curious way shown in Pl. 45 b (MFEA); specimens of the same kind in Seikwa 59, Senoku 82, Shant'u 154.

Type 4. In another group the B-style pattern of the preceding group has spread up to the rim and the under side of the spout and the wing. Sometimes eyes of Dissolved T'aot'ie appear repeated at successive heights, in extreme cases as many as four sets: Pl. 46 a; Pl. 46 b; Further: Seligman Pl. 4; Tsun 2: 50; Seikwa Pl. 60; Shierkia 9: 2; Yen'ku, shang 26; Shant'u 150.

Type 5. A large category has the B-style element Animal triple band (i. e. Dissolved T'aot'ie compressed within a band) on the belly, either framed-in or not by Circle bands. No Rising blades.

Examples: Pl. 47 a (MFEA); Pl. 47 b (= Hakkaku Pl. 16); Pl. 48 a (= Senoku 83); Further: Senoku Pl. 83; Chengsung, Chung 33, etc. Sometimes the band, instead of an Animal triple band, shows other simple B-style features, for instance Band with diagonals, Pl. 48 b.

An interesting variant is shown in Pl. 63 a (MFEA): the Whorl circle, so common in the Kuei class, does not, as a rule, occur in the Tsüe class; so far as I know, this specimen is unique.

Type 6. A small but interesting category, important because it is a conservative remainder from a very early type, is the Tsüe with a flat bottom. It seems to have been produced in the workshops both of the A-style and the B-style artisans. A-style elements appear to adorn specimens in Seikwa Pl. 62, in K'ao ku hüe pao 7 (1954) Pl. 27 and in Mizuno Pls. 36, 37 (all too indistinct to bear reproduction). Our Pls. 49 a (Gump coll.) and 49 b (Metrop. Mus. of Art) both show the Dissolved T'aot'ie of the B-style (a specimen similar to Pl. 49 a in Mizuno Pl. 18), and Pl. 50 a (= Senoku Pl. 85) gives the same in two belts, moreover with the B-style element Circle band; a similar specimen in White Pl. 78.

Hu

The Hu flasks (some variants of which have inappropriately been called Yu in both Chinese and Western works, including some of my own) may be divided into two principal groups: Stout-necked Hu, mostly large and forceful vessels, and Slender-necked Hu, often smaller and possessing a weaker kind of elegance.

Stout-necked Hu

This class is not very comprehensive but contains some of the most imposing types of ritual vessels.

A style

Type 1. The principal group is the Hu with a forceful T'aot'ie (Bodied, Mask or Disjointed) on the belly, either flanked or not by Vertical dragons. An important detail here is that several prominent specimens have the horns in the shape of Trunked dragons, a feature otherwise known only from the Square Yi vessels. Besides this motif in the principal broad belt there are subordinate belts with a richly varied A-style décor. We find:

One neck-belt only, Pl. 50 b (a similar vessel in the Buffalo Museum); another specimen in Trautmann Pl. 10 (though here with the admixture of a B element: Eyed band with diagonals in the foot-belt); one more specimen Yechung I, shang 17. A vessel with a less stern, more elegant décor in Pl. 51 a (= Seikwa Pl. 134); a similar one but with Dragons in the neck-belt in Kobi-jutsu Pl. 15.

Three décor belts above the principal one: Pl. 51 b (Portland Museum); Pl. 52 a; Jung No. 709 (Dragon's horns).

Four décor belts above the principal one: Pl. 52 b (Freer Gallery); a similar one (Dragon's horns) in Staatl. Mus. Berlin; specimens in colls. Oeder, Brundage etc.

A vessel in Pl. 63 b, the toothed flanges of which indicate a Chou date, has an admixture of B décor: Circle band.

Type 2. A limited category has a bare belly and a neck-belt with T'aot'ie: Pl. 53 a (Malmö Museum); Pl. 53 b (Academia Sinica) = K'ao ku hüe pao 7 (1954) Pl. 10; two more specimens, one with short Rising blades above the neck-belt (*ibid.*); Jung No. 710. This category, though very small, is interesting since it forms a counterpart to a certain category of Round Ting (Marg. I: 299, type d), but has no similar counterparts in Li-ting, Kuei or Yu.

B style

Vessels having a décor on the belly with B-style elements are very rare. One example is Pl. 54 a (MFEA), which both on the belly and in the upper neck-belt has a very elaborate T'aot'ie (with long rows of quills) which is strongly Dissolved. Another instance in Senoku Pl. 73. The normal types all have a non-figured belly. There are two principal groups.

Type 3. Belly bare, neck-belt (placed fairly low) with Animal triple band, either framed-in or not by Circle bands; foot-belt either bare or figured with B-style elements or showing "neutral" elements (Dragons etc.). This category is very large and only a few examples can be cited here: Pl. 54 b (MFEA); Pl. 55 a (here Animal triple band and Circle bands, in foot-belt Eyed band with diagonals). Further: Pillsbury Pl. 26; Visser Pl. 14; BMFEA 9, Pl. 46; Seikwa Pl. 131; Voretzsch Abb. 26; Trautmann Pl. 11 has Dragons in the neck-belt but the B-style element De-tailed birds in the foot-belt. Occasionally there are no B elements in the belts but only "neutral" features (Dragons,

Spiral bands etc.) but then the general arrangement and the very low and discreet relief in the narrow belts makes it natural to place such specimens in our present group. Examples: Wuying 127; Exhibition Pl. 14: 22 (with spout) etc.

Type 4. Belly bare except for a cross-band in low relief, in the centre of which is the Diamond in high relief which is a common adornment on the forehead of the T'aot'ie (see for instance Pls. 18 a, 25 a, 51 a); neck-belt and, often, foot-belt with the B-style elements De-tailed birds or Animal triple band.

Examples: Pl. 55 b; Further: Seikwa Pls. 82—84.

Slender-necked Hu

Type 5. Vessels with a broadly bulging belly. They are highly disparate, and we can only give a few examples:

A style

Pl. 56 a (Brundage coll.); Pl. 56 b (Cranbrook Academy); Pl. 57 a (= Mizuno Pl. 47); Pl. 57 b (Academia Sinica); Pl. 58 a (Mus. f. Kunst u. Gewerbe Hamburg); a fairly similar vessel Pillsbury Pl. 29.

B style

Pl. 58 b (Freer Gallery) with Interlocked T's, Animal triple band, Dissolved T'aot'ie; a somewhat analogous vessel Pillsbury Pl. 30; Pl. 59 a (Erickson coll.) with Dissolved T'aot'ie; Pl. 59 b (Mus. Guimet) and a fairly similar vessel Lochow II, Pl. 5; Pl. 60 a (MFEA) with Circle bands; very similar specimens in Yechung III: 33, Lochow II, Pl. 10, Consten Pl. 16 and Pillsbury Pl. 27; Pl. 60 b (= Pillsbury Pl. 26) with Animal triple band, Circle bands and (in foot-belt) Eyed band with diagonals; kindred vessels in Visser Pl. 14, Paoyün 84, Shuangkien kikin, shang 19 and in many collections (C. D. Carter, Vannotti, v. d. Heydt etc.).

Type 6. Tall and slender Hu, all in B-style: Pl. 61 a (= Seikwa Pl. 137); a similar vessel Seikwa Pl. 138; Pl. 61 b (= Seikwa Pl. 139); a similar vessel in Eumorfopoulos I, Pl. 23.



a

British Museum



b

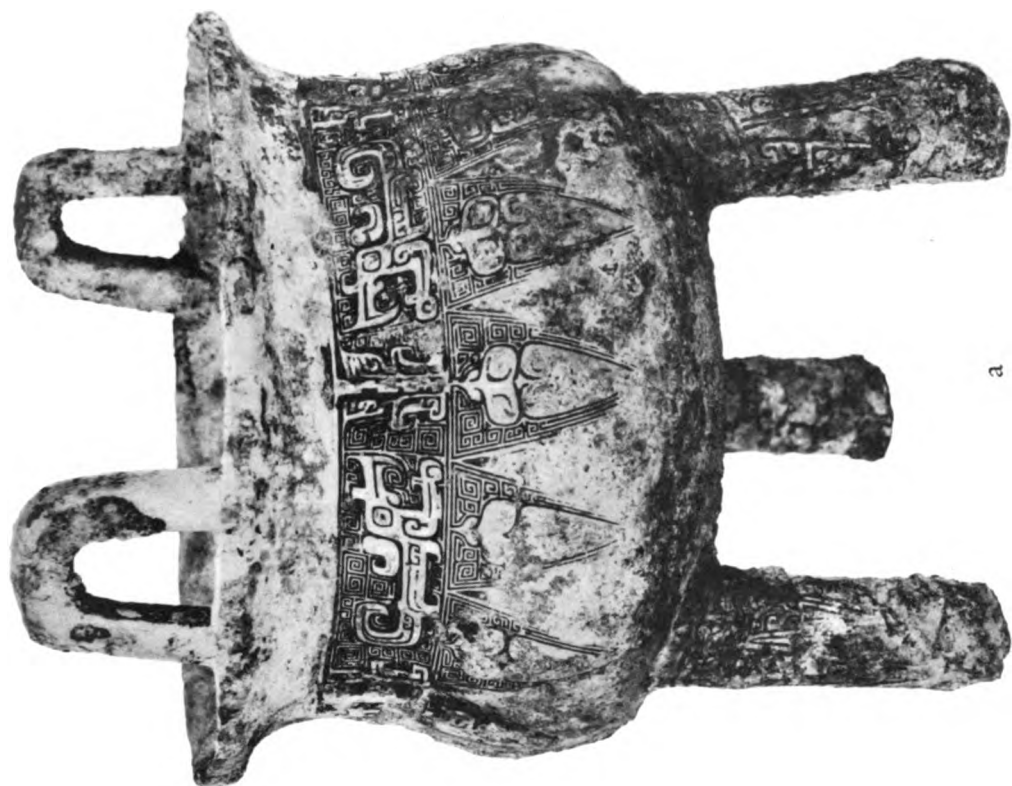
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a



b



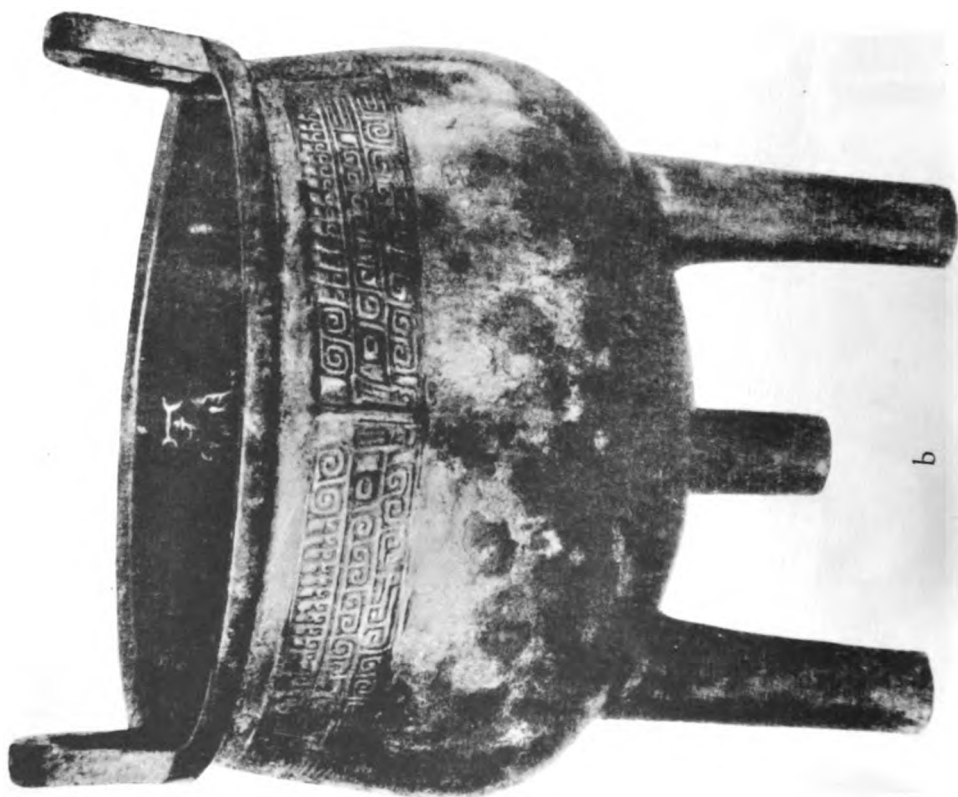
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b



a



b



Antik. Museum, Leipzig

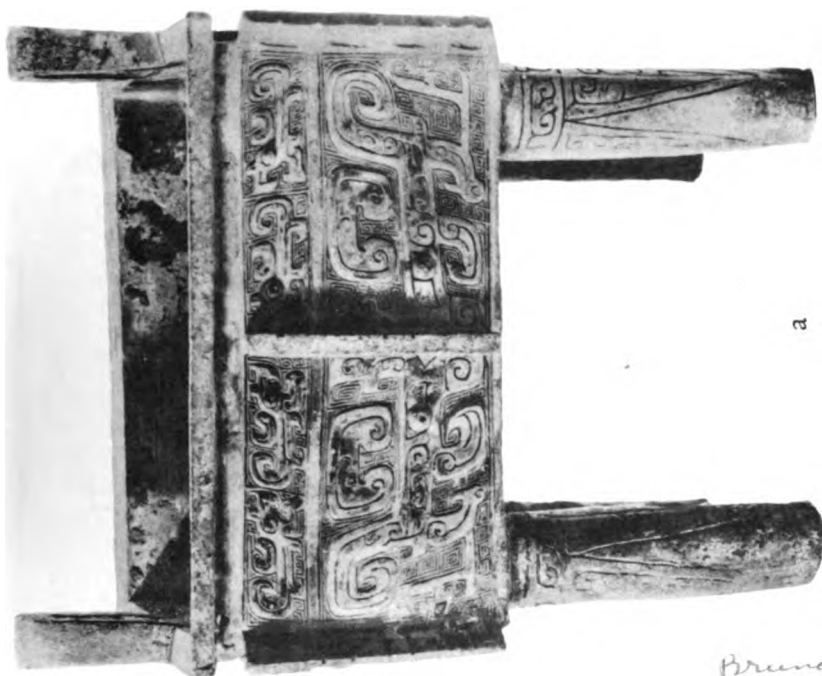




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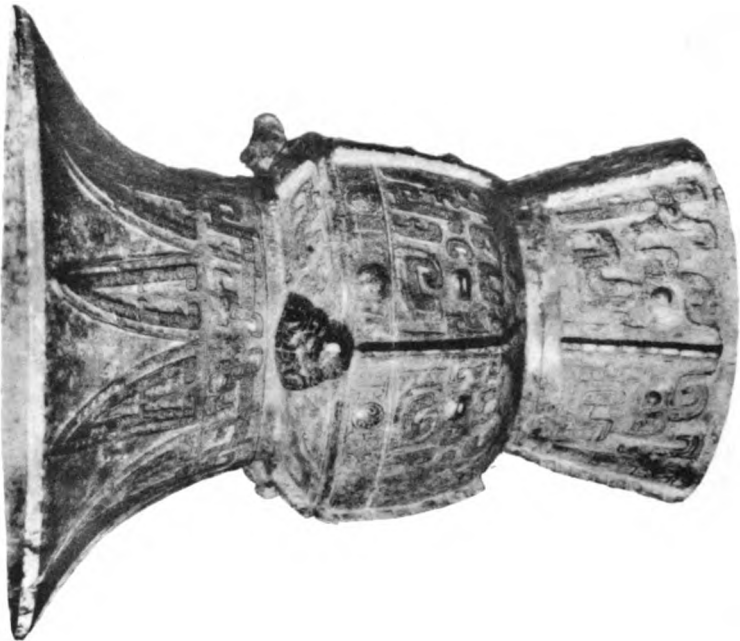
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Brundage coll.



Nelson, K. C.



a



b

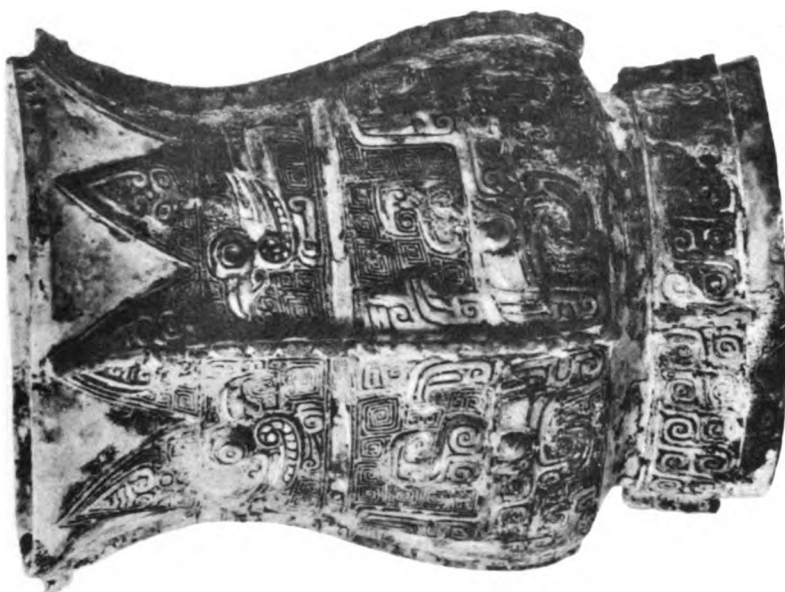




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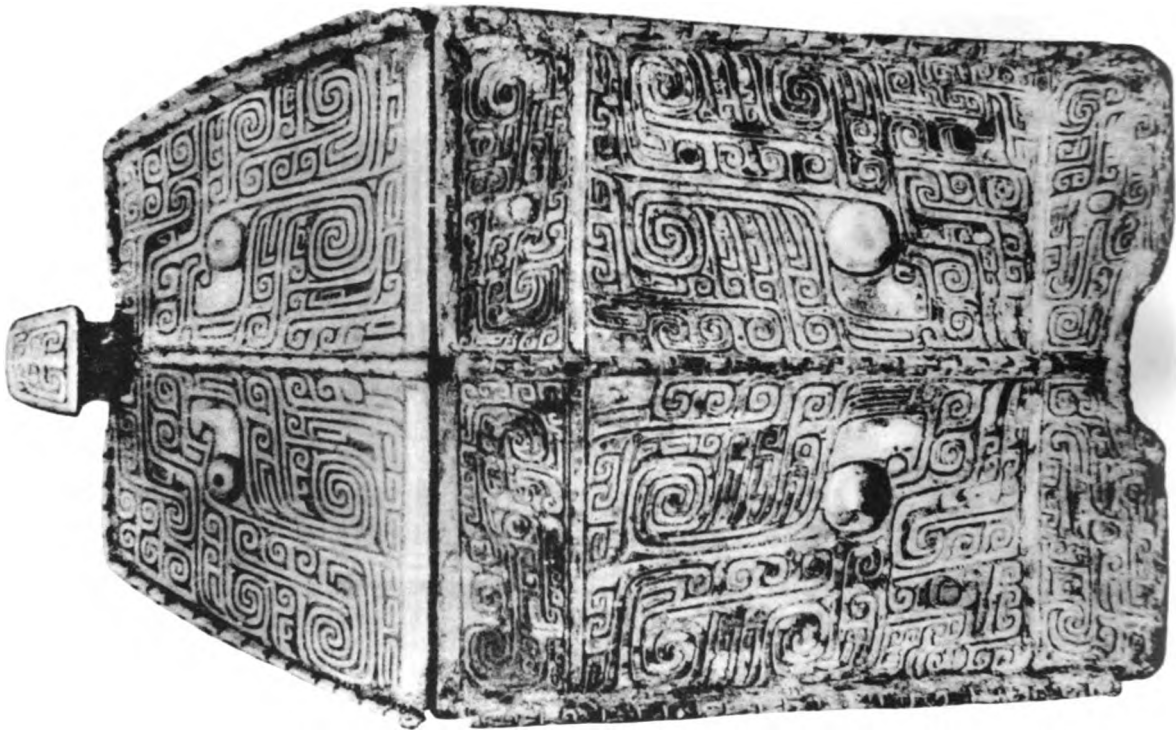
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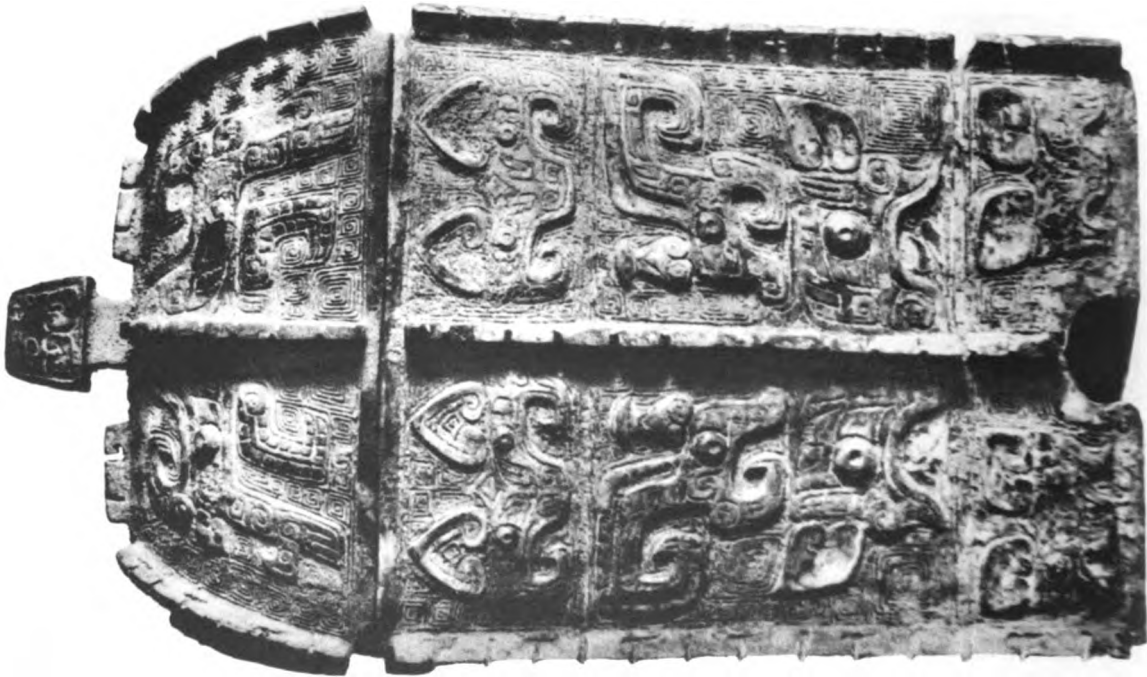
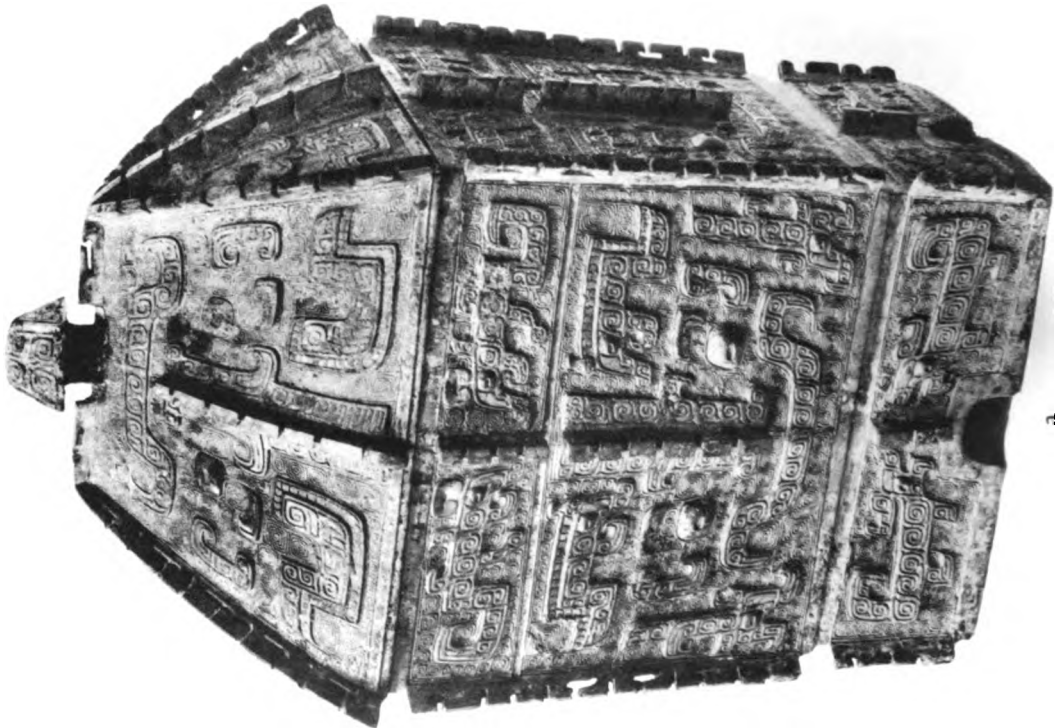


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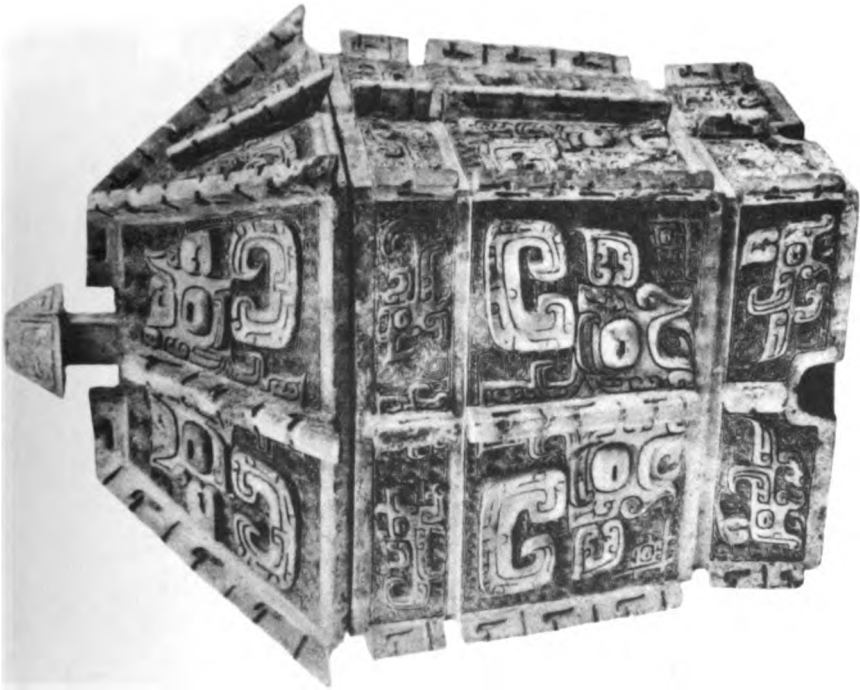






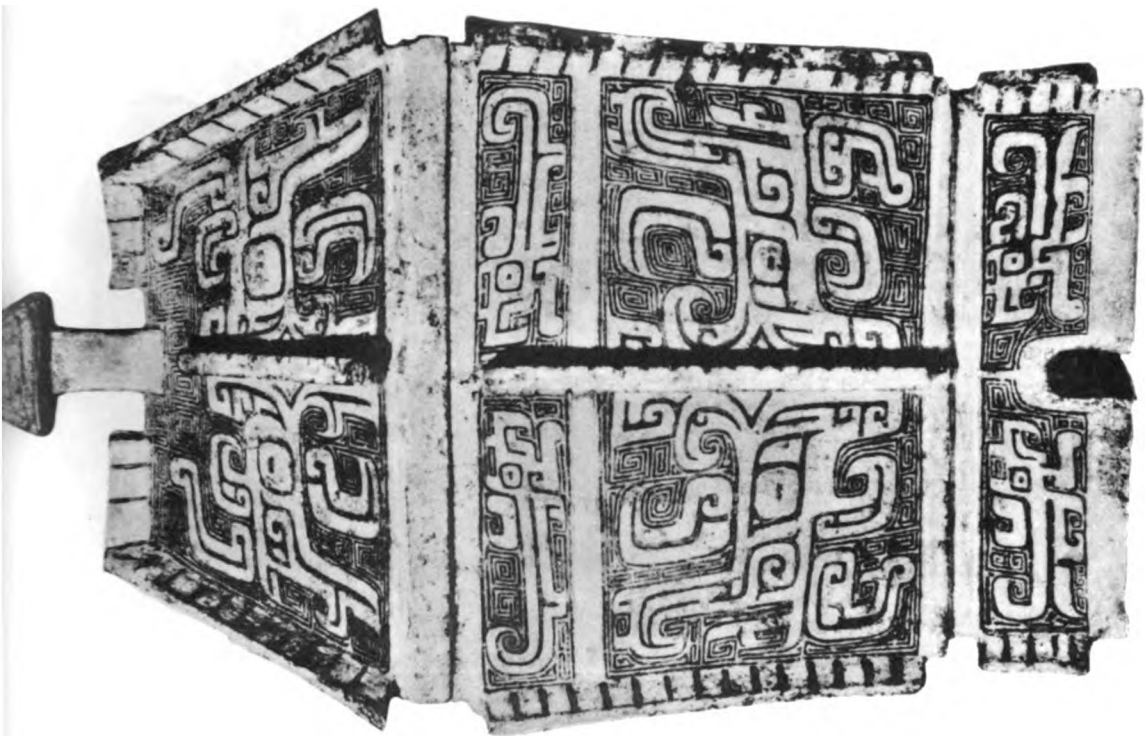


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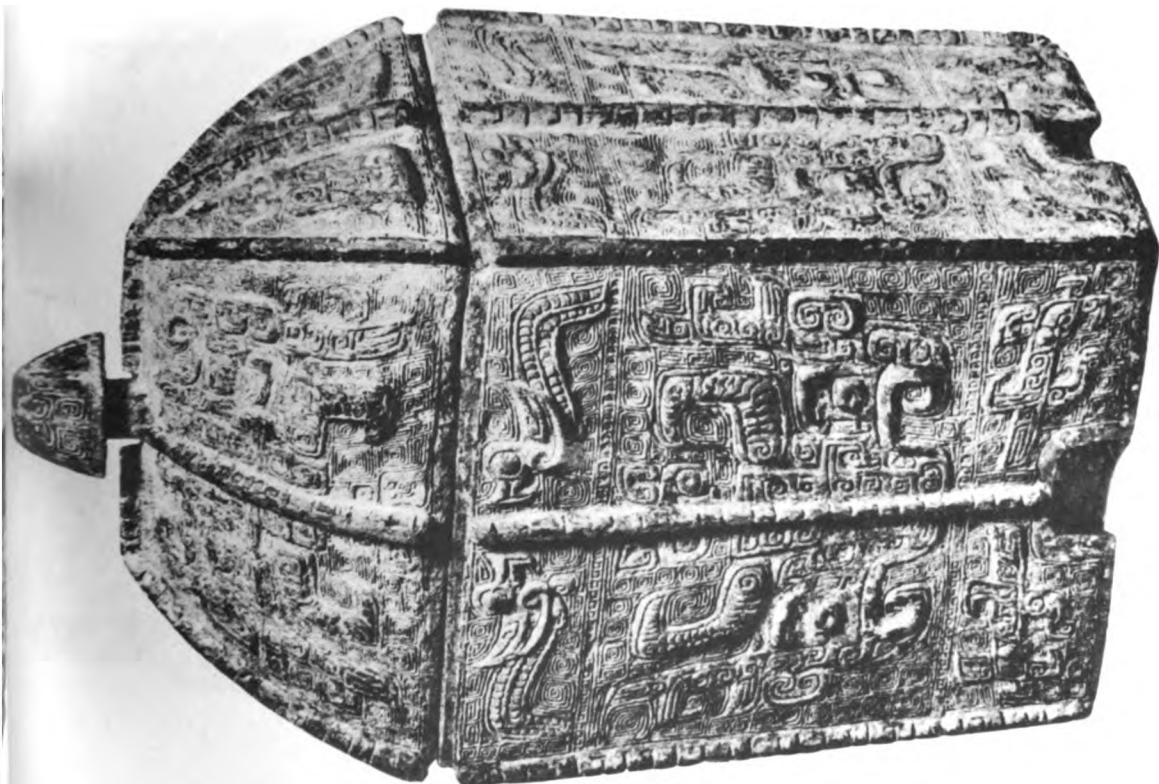


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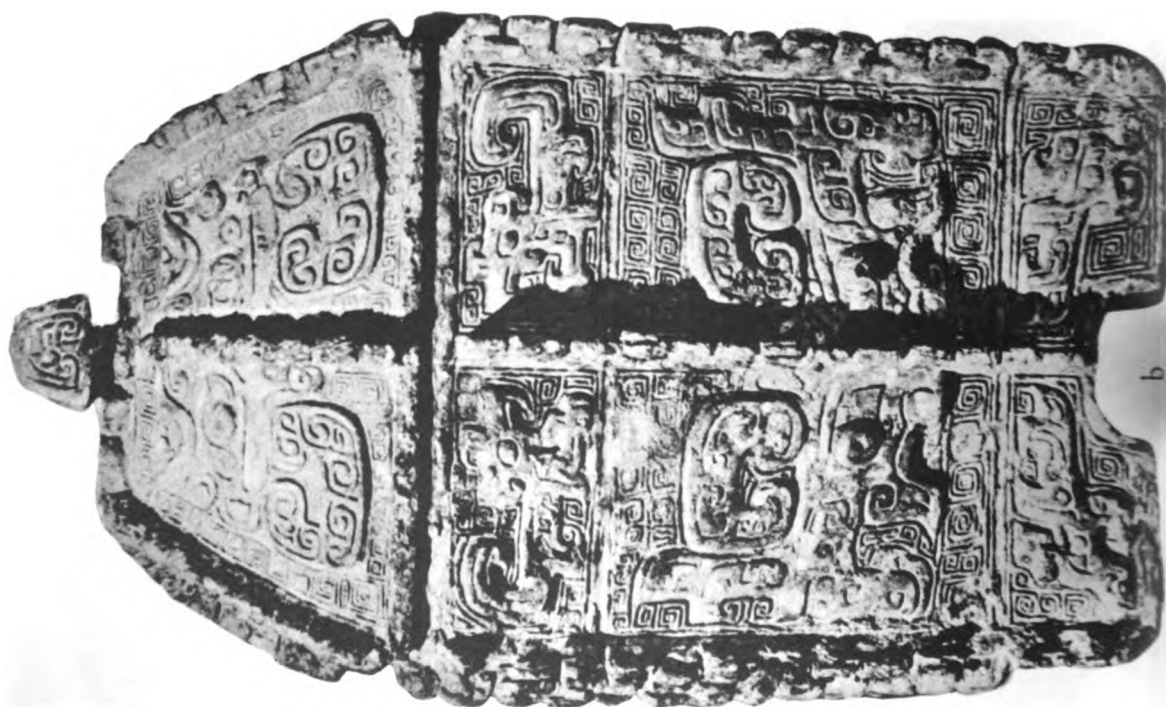




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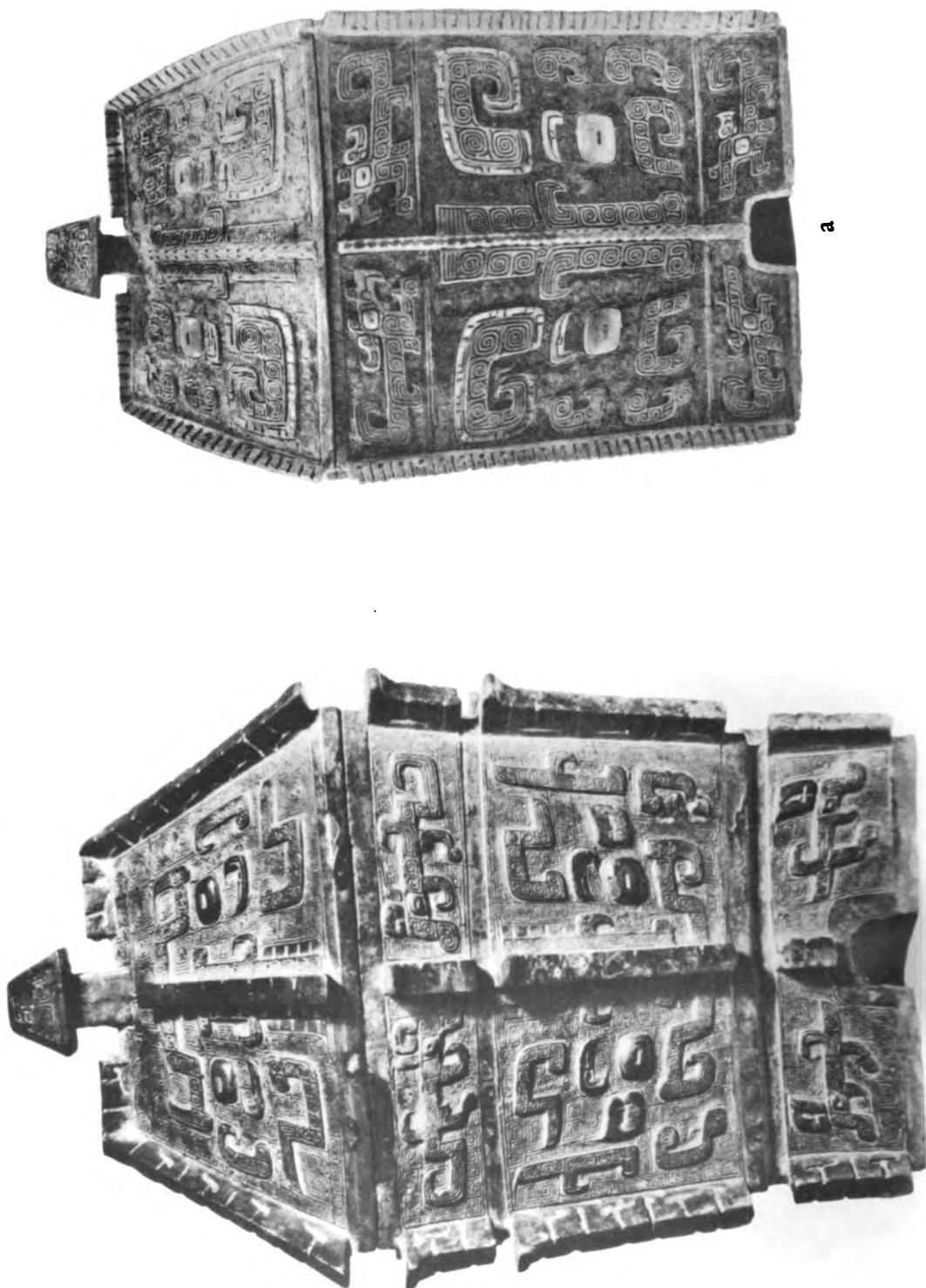


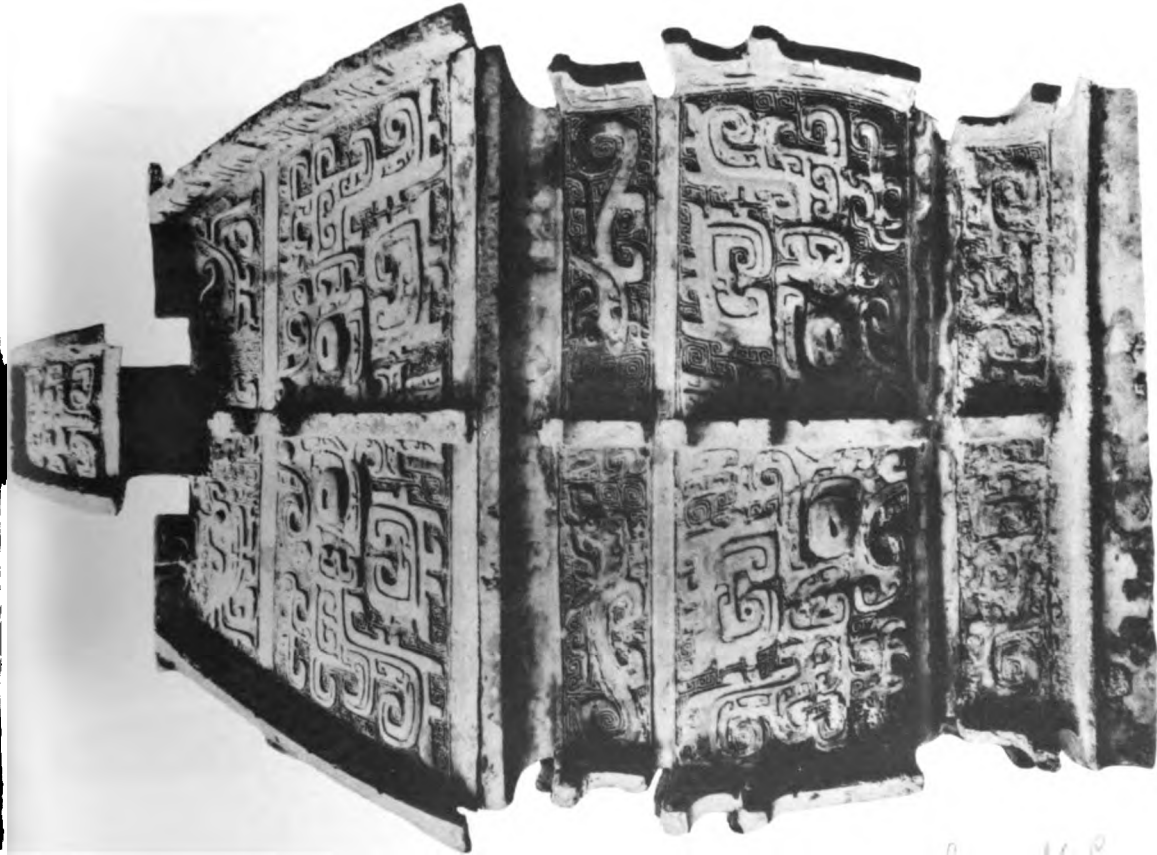


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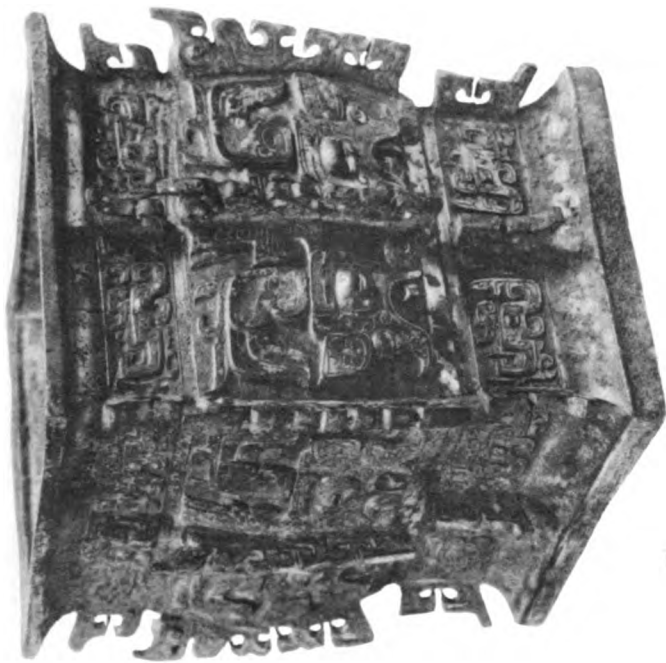


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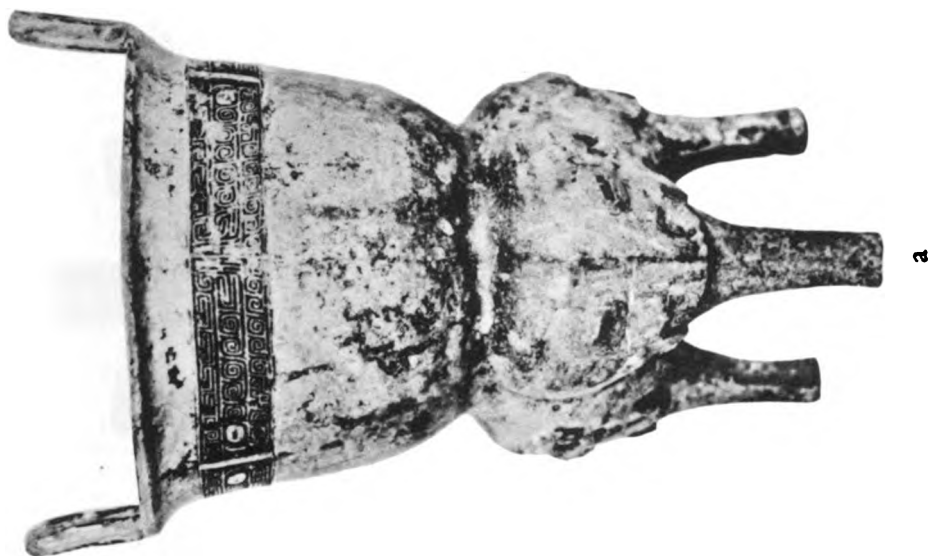
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Figure 1



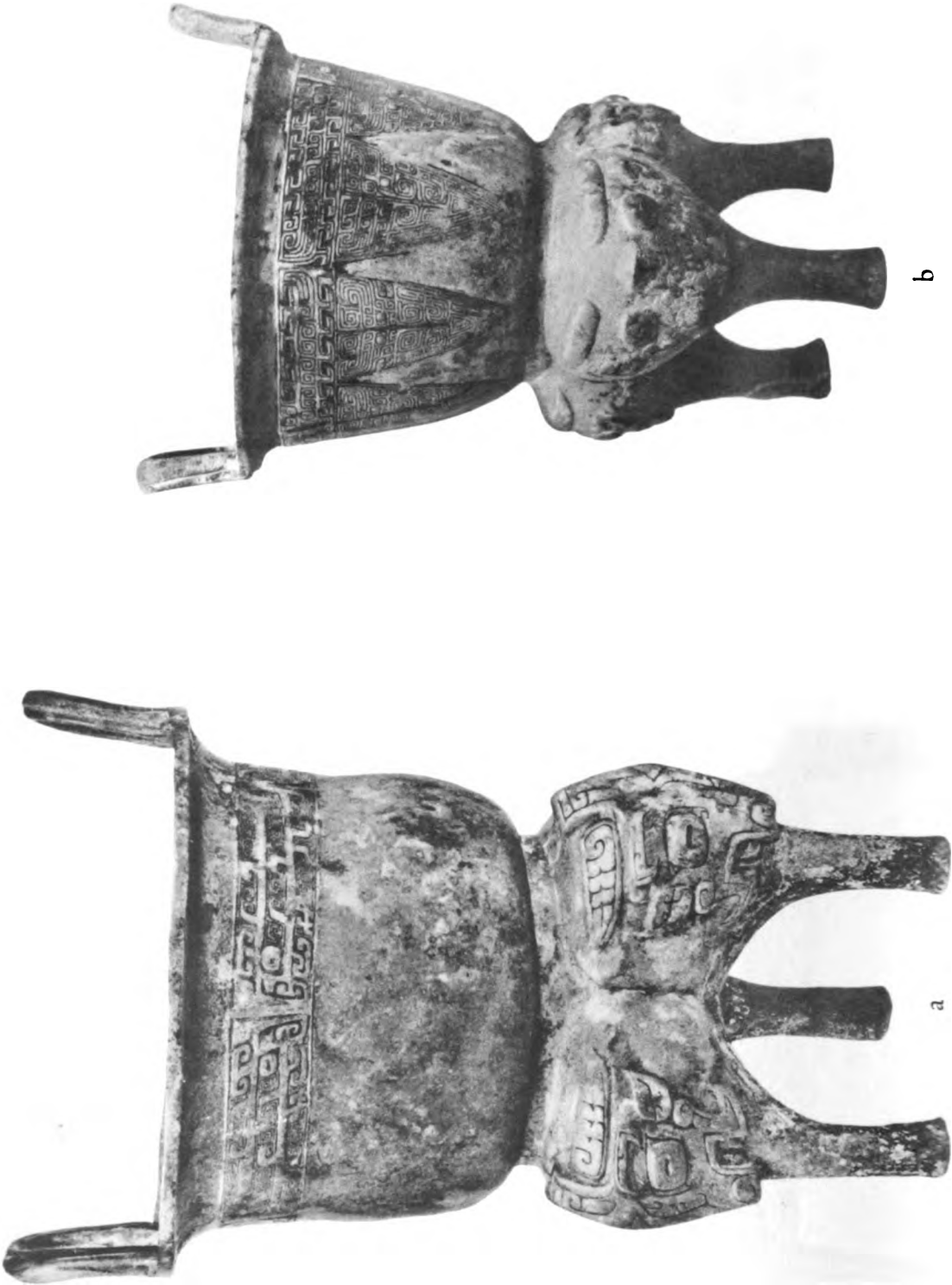
Figure 2



a



b





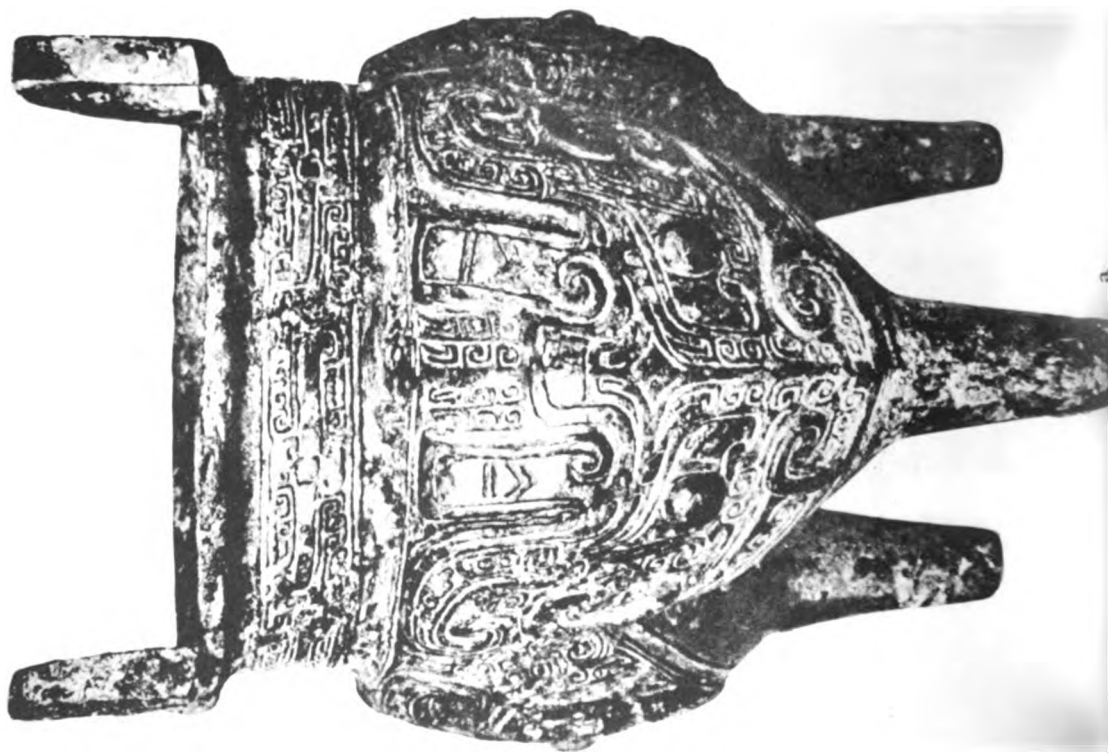
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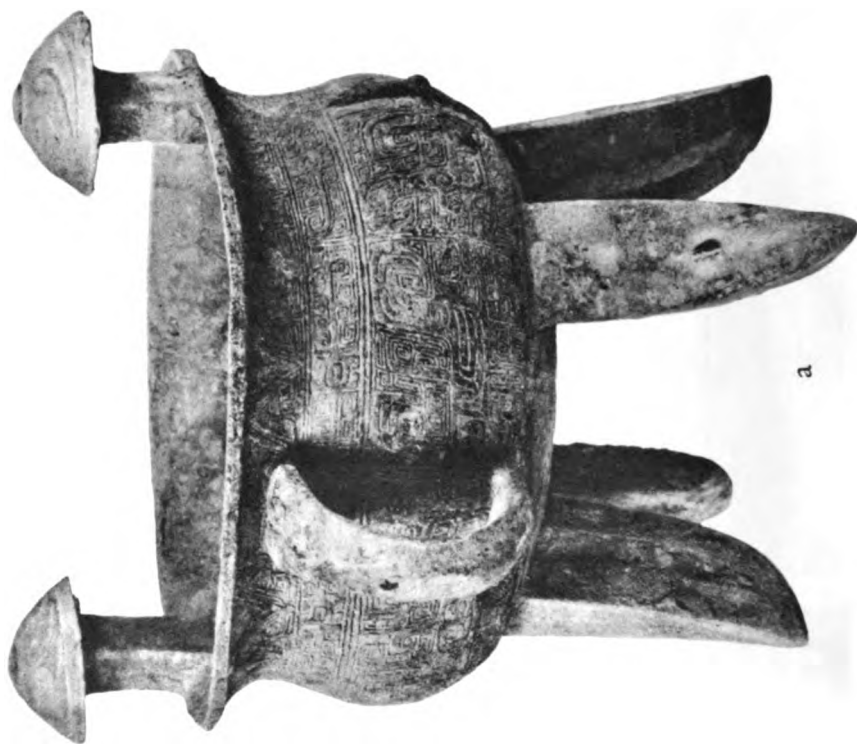
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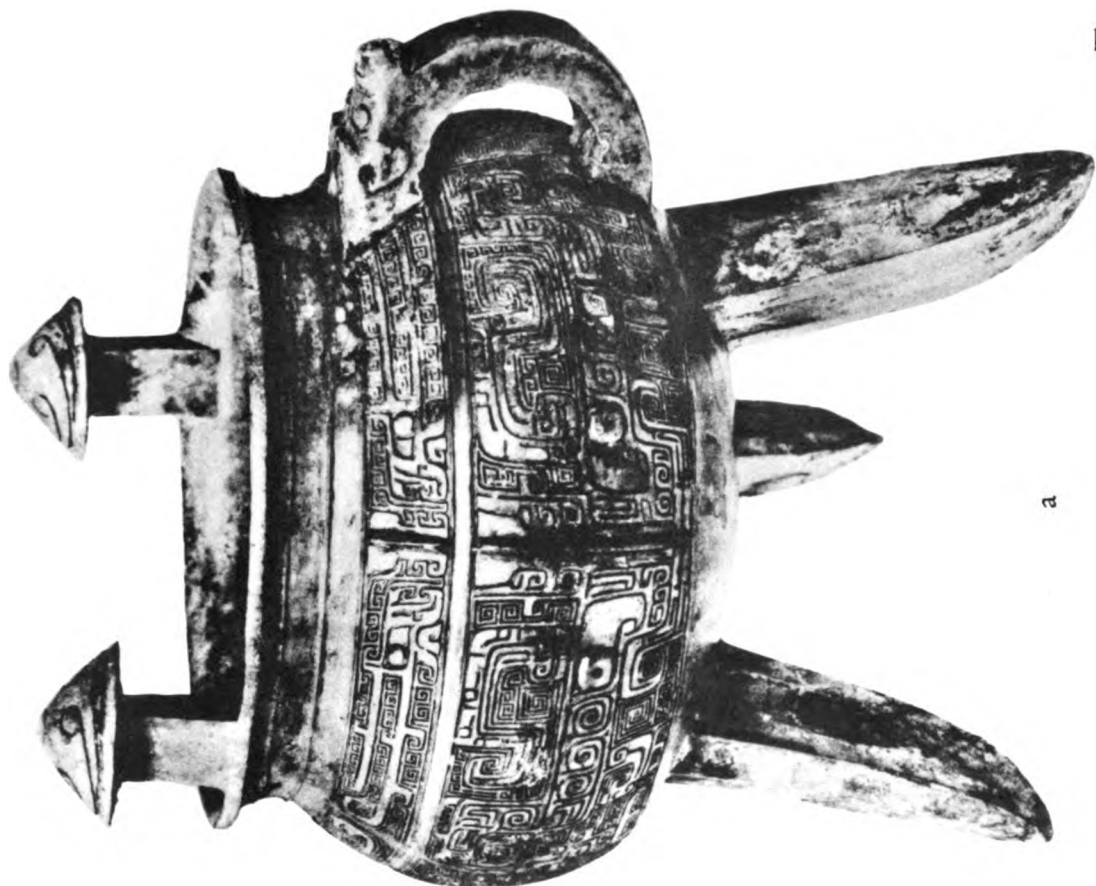


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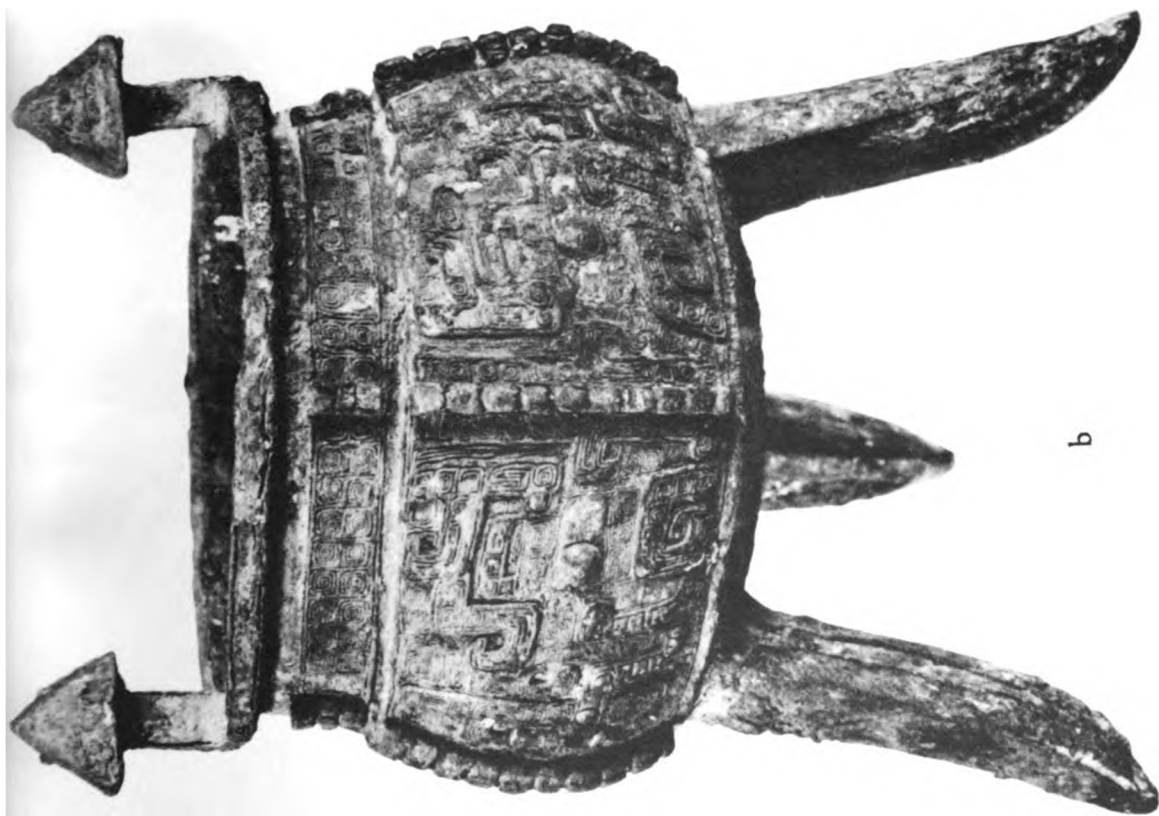








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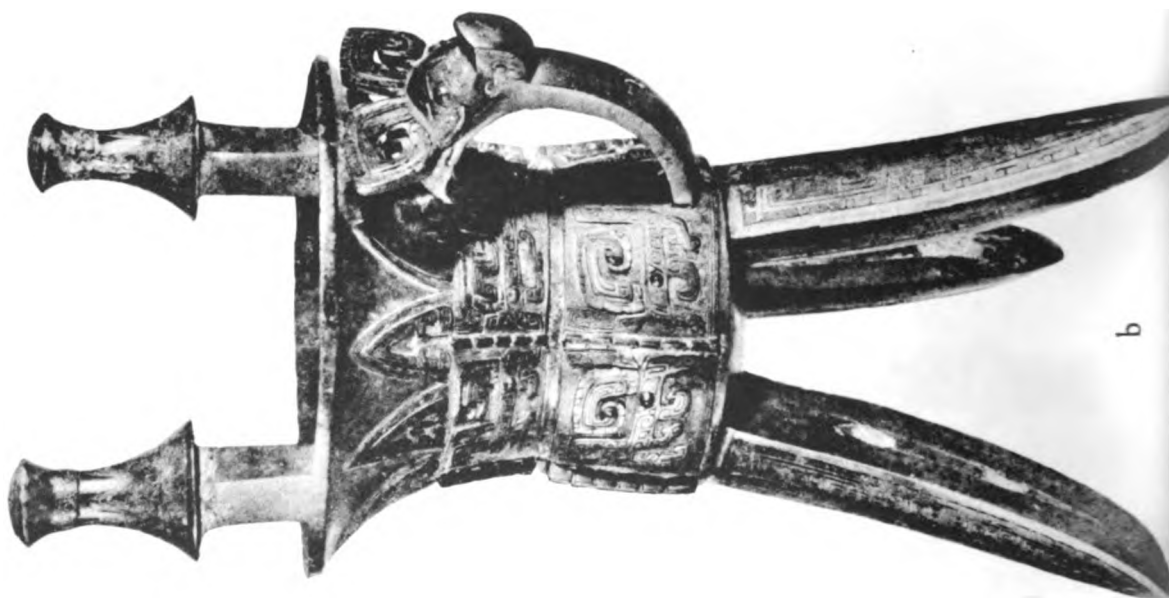
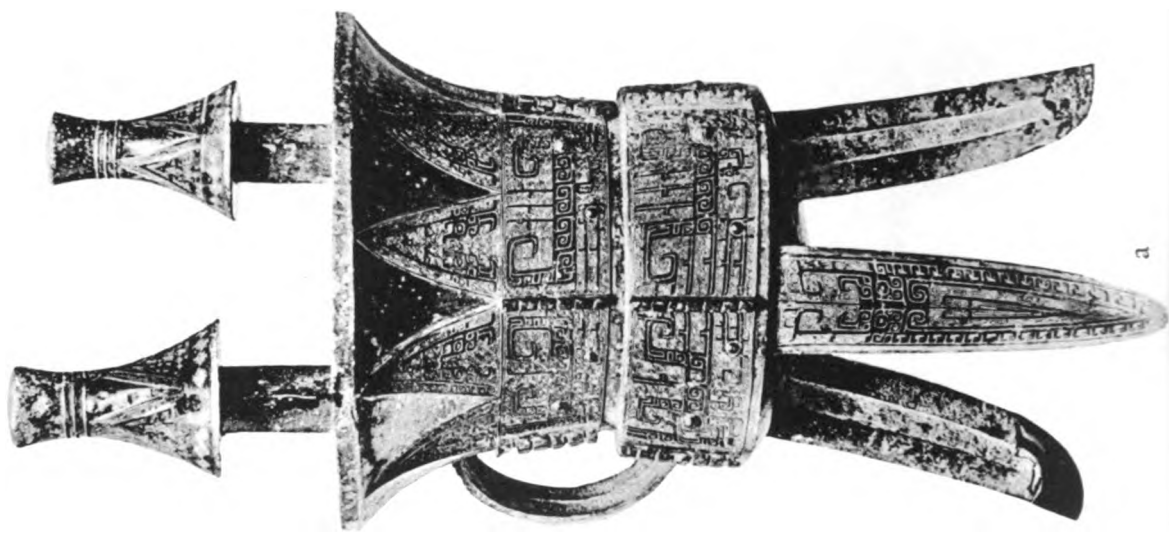




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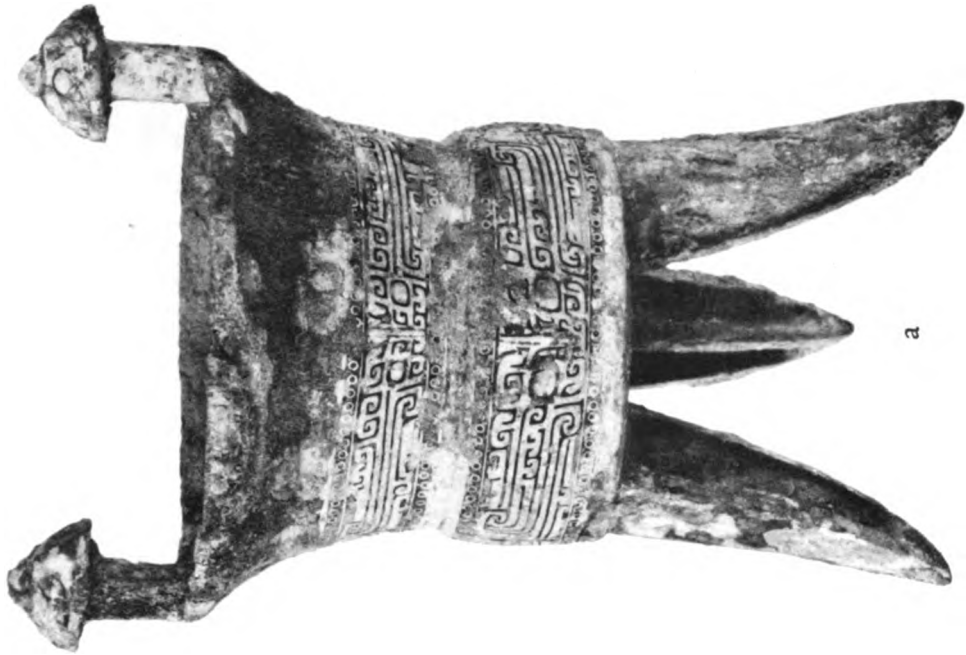


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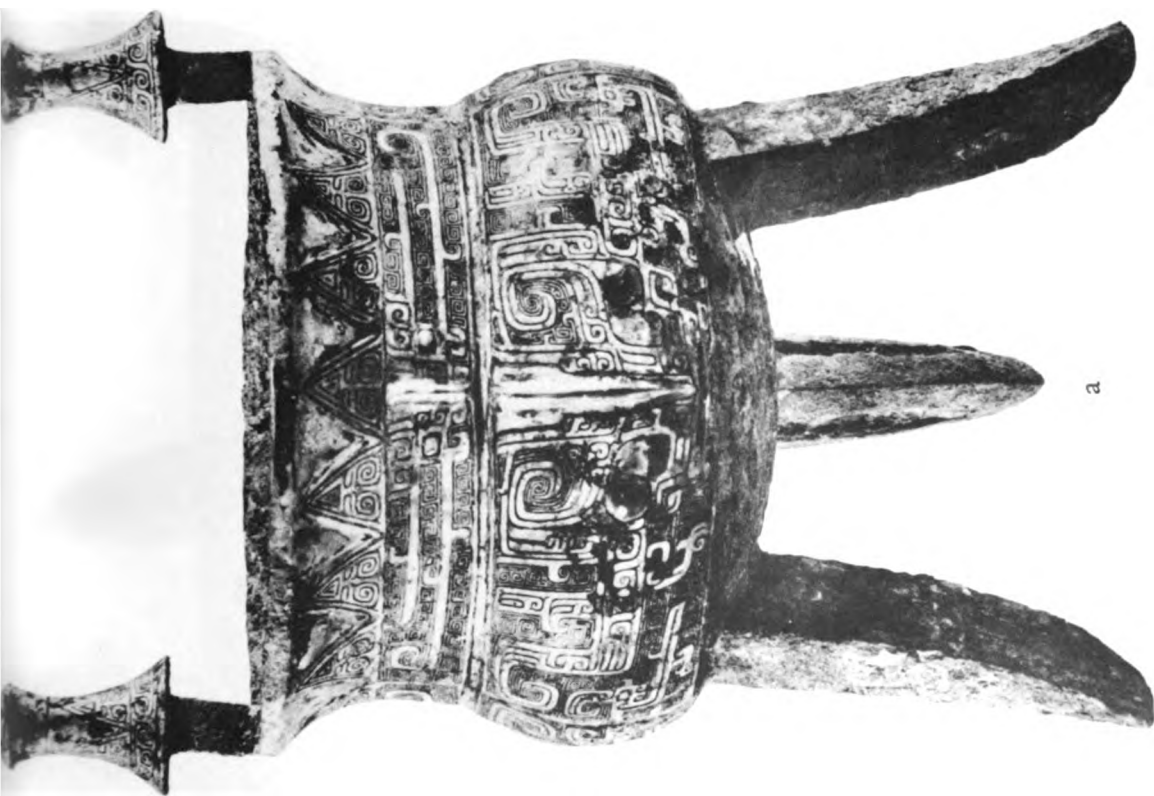


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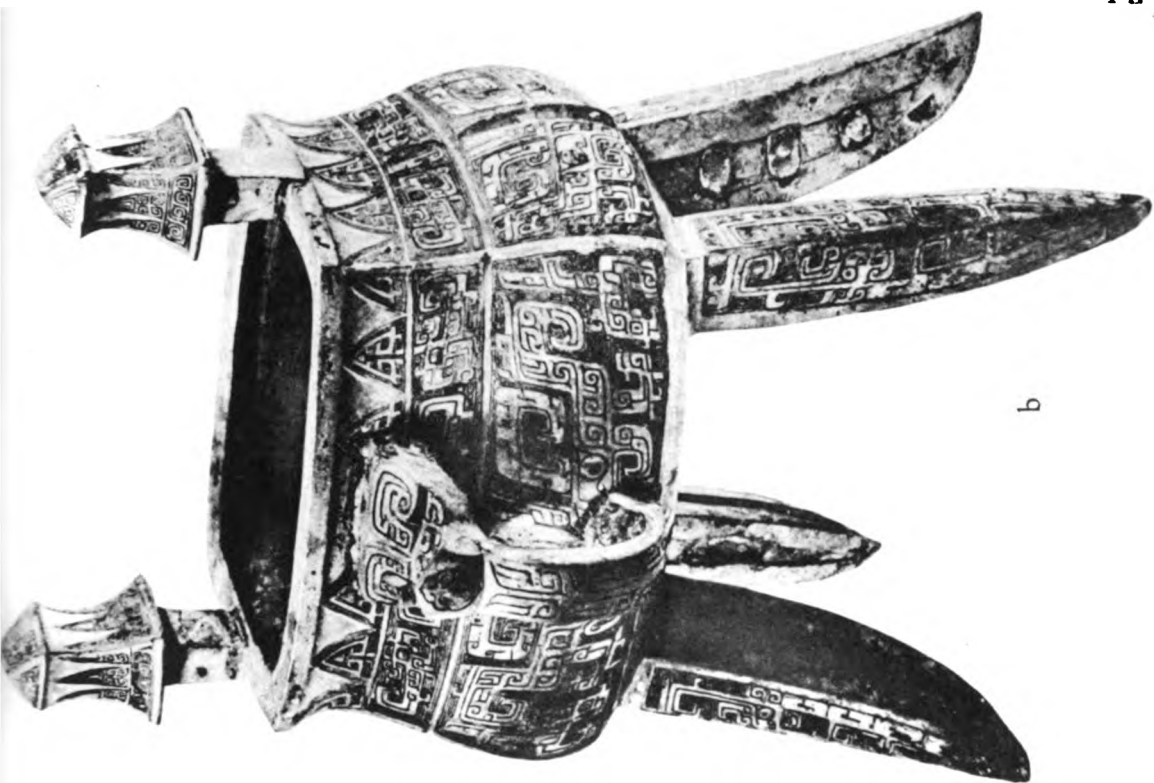


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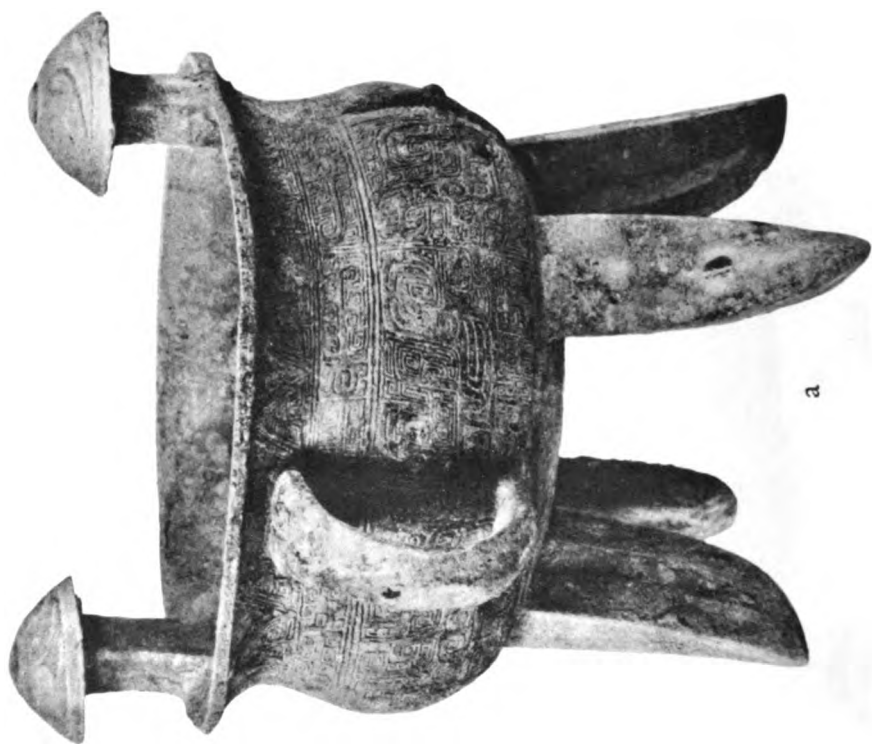


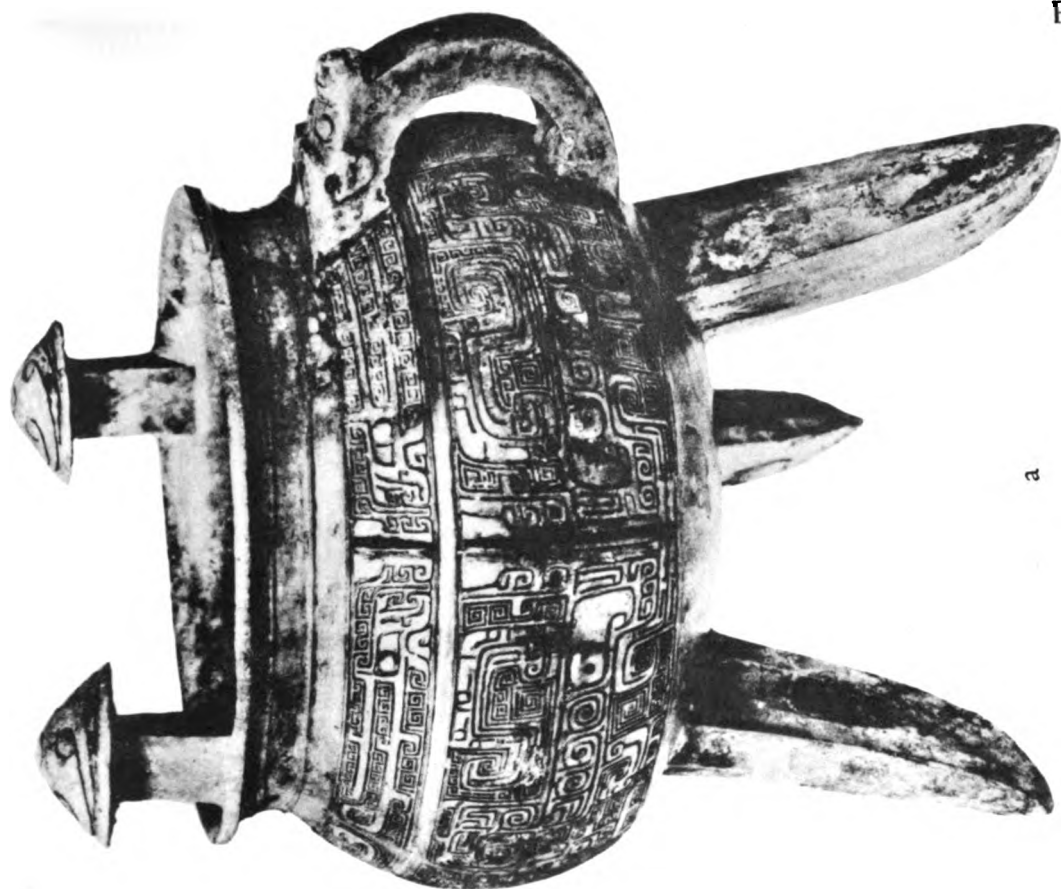


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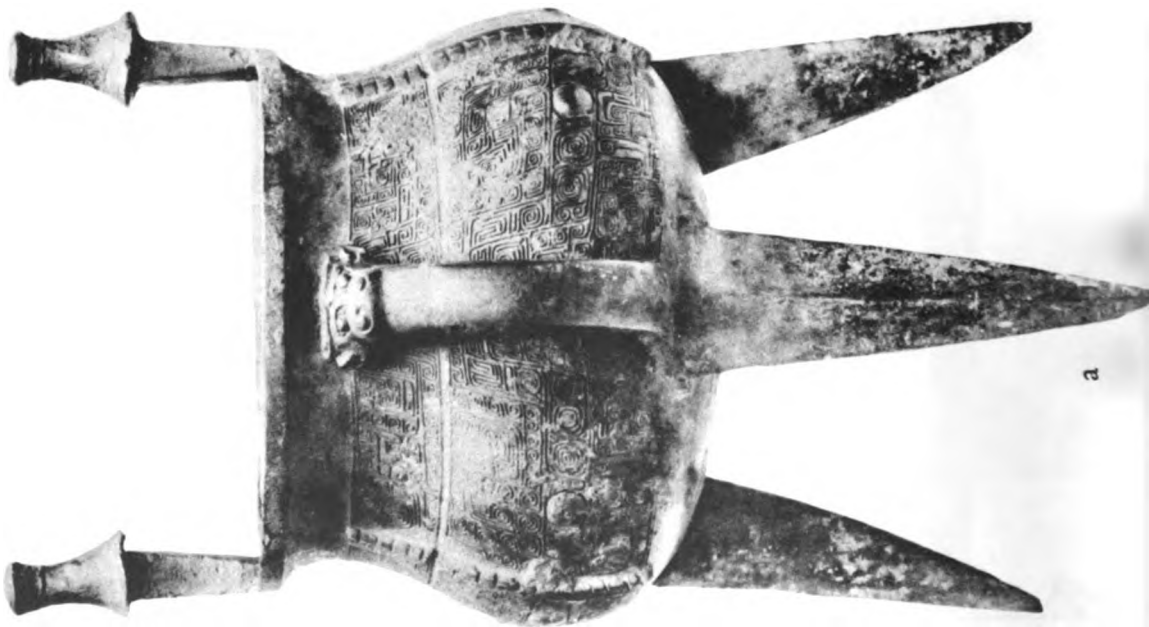




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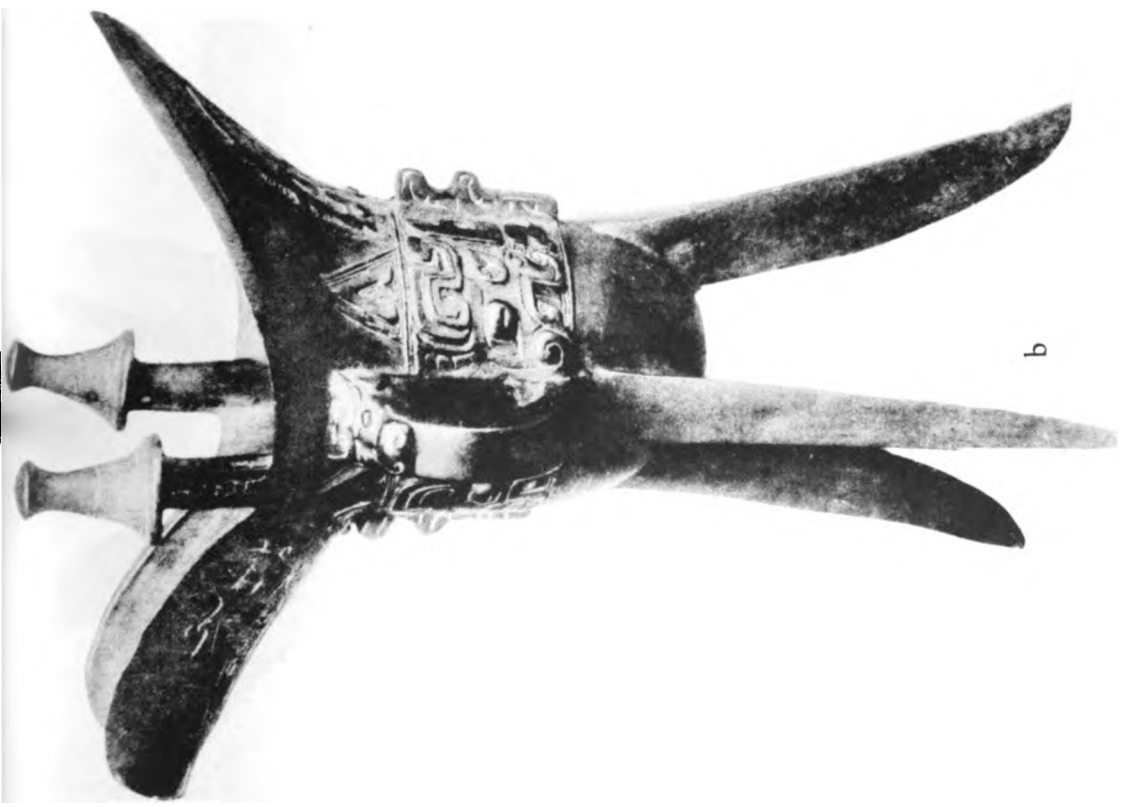


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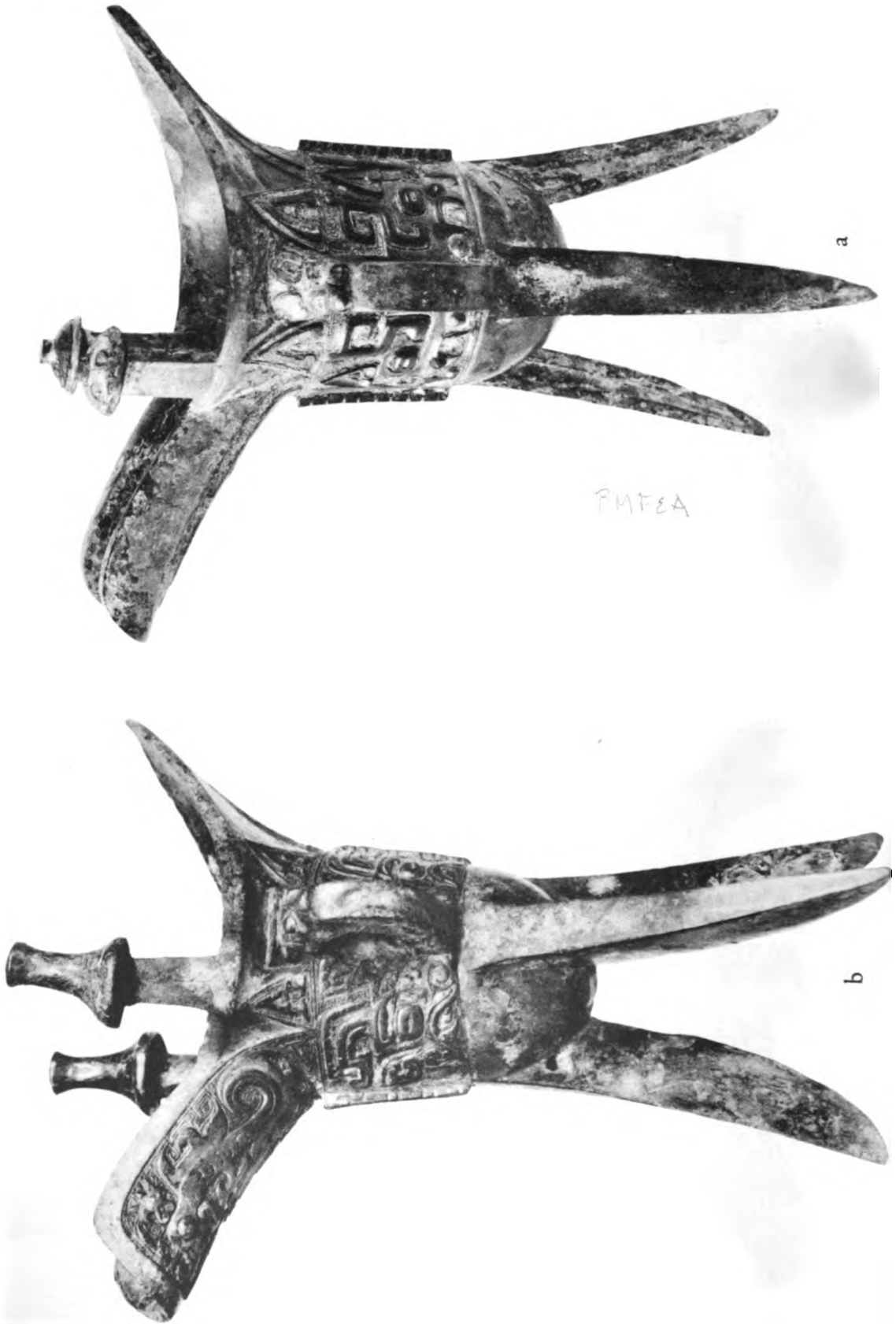


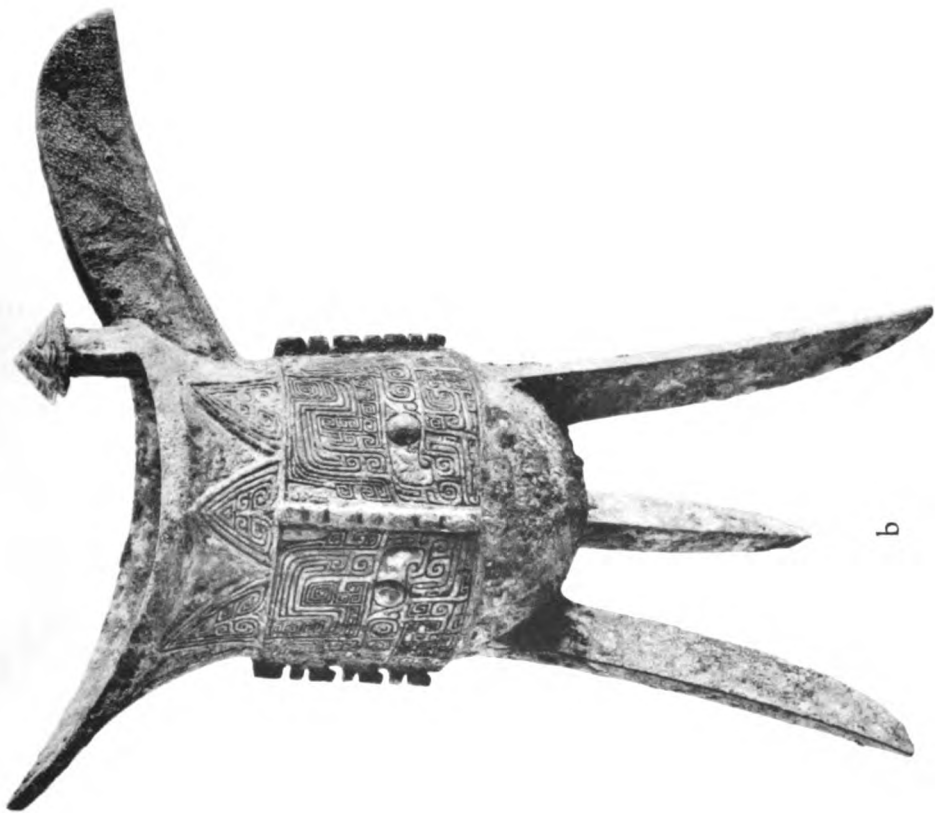
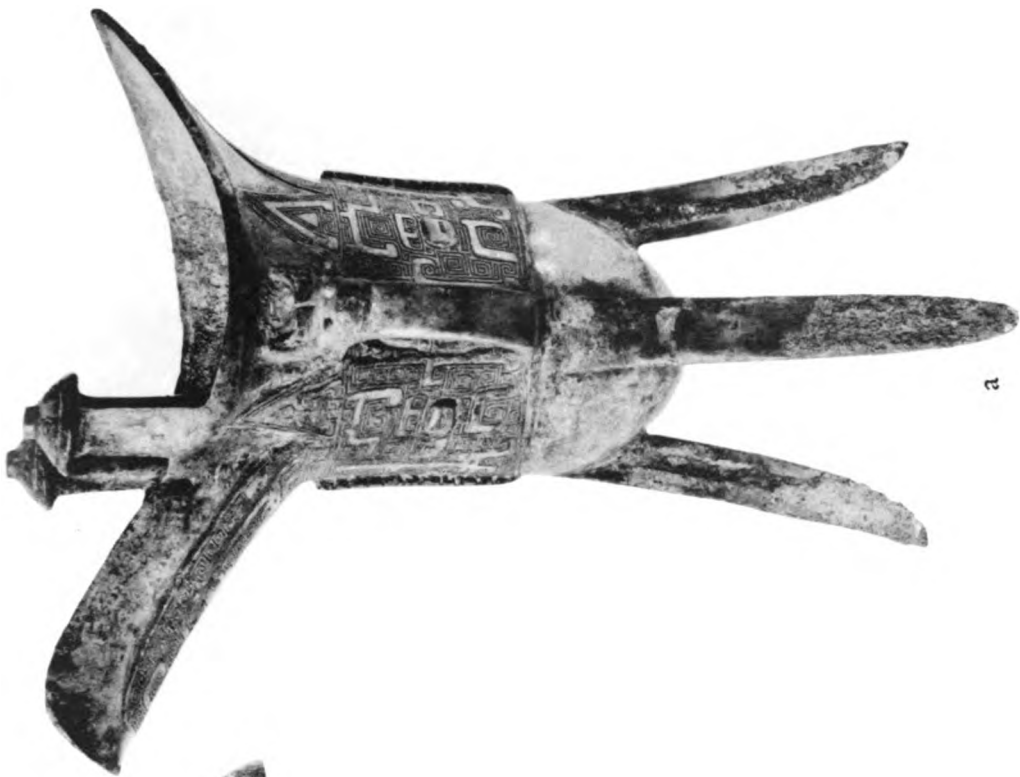


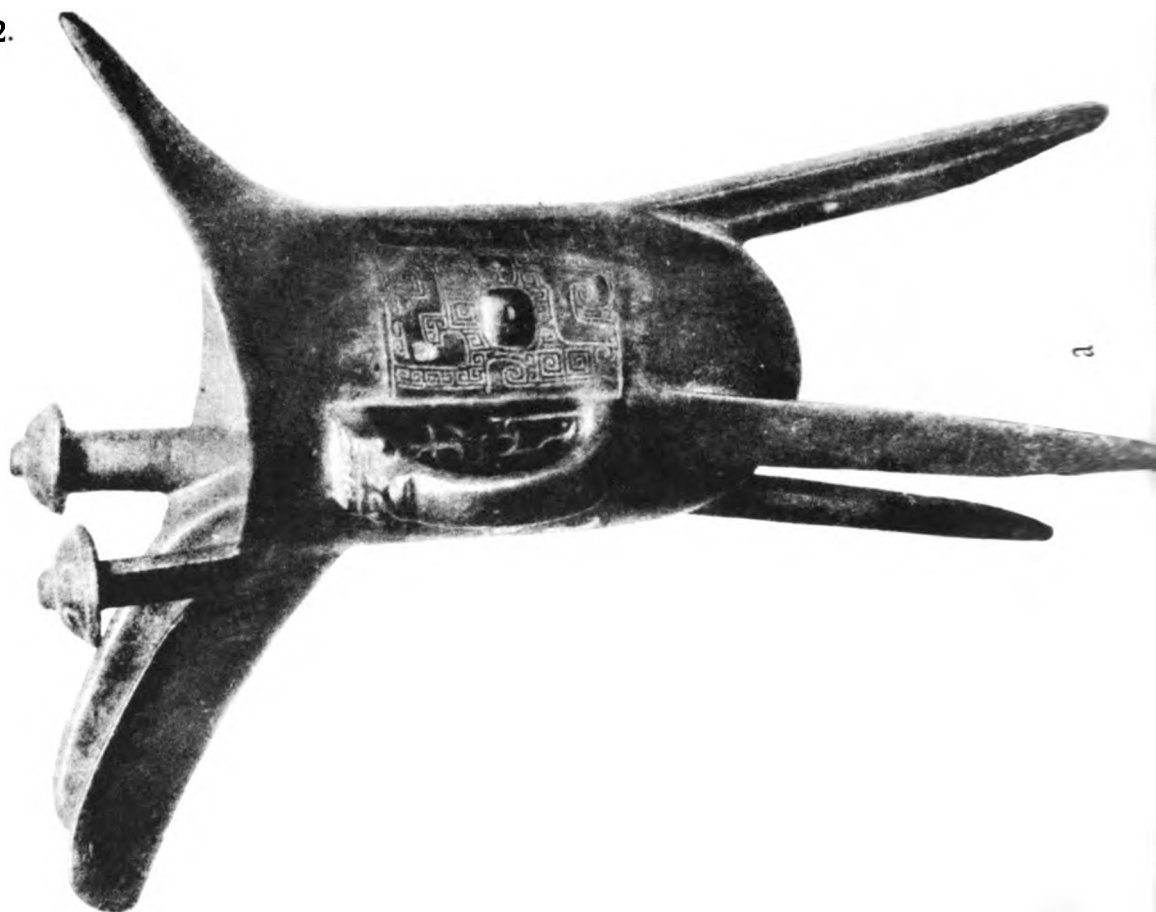
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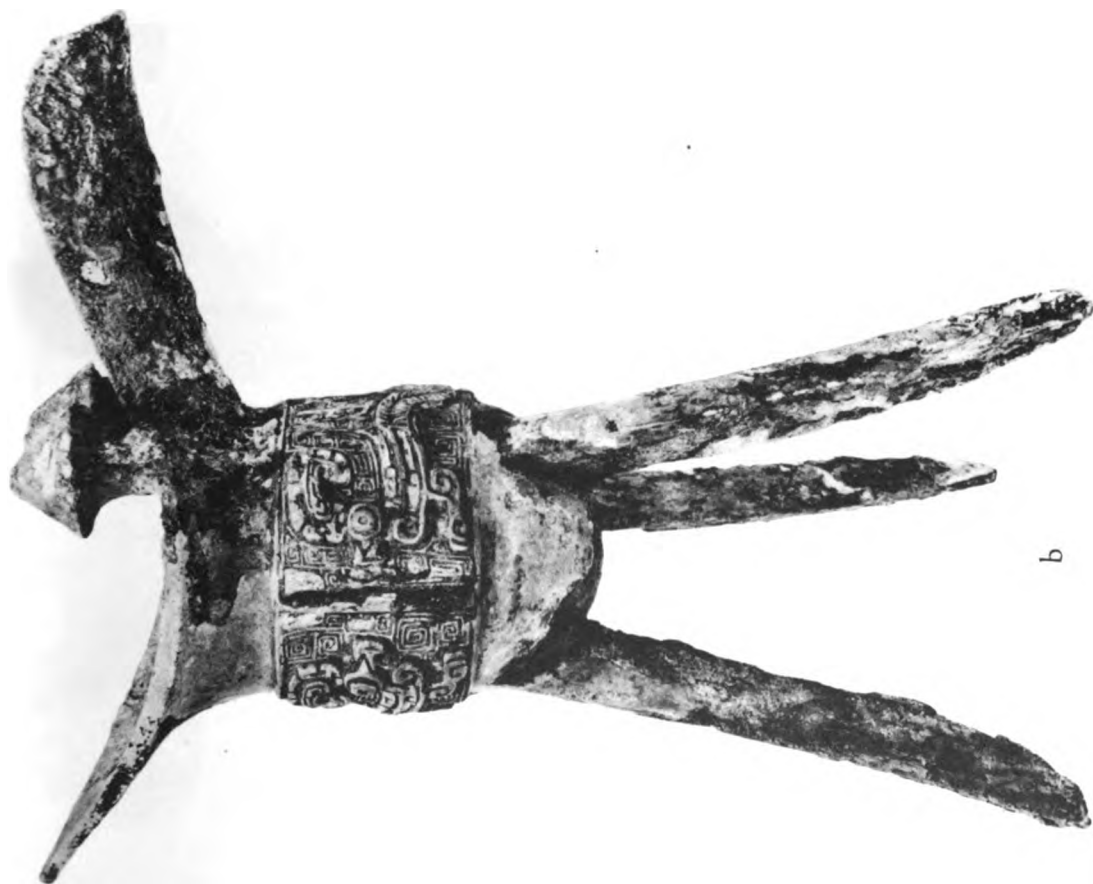
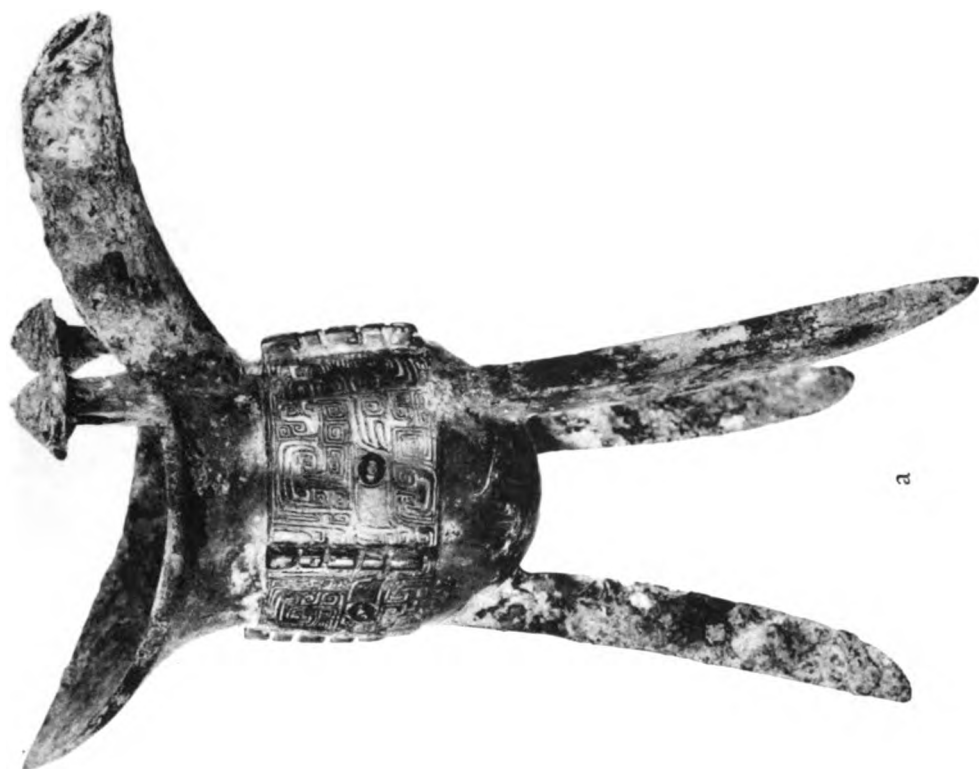


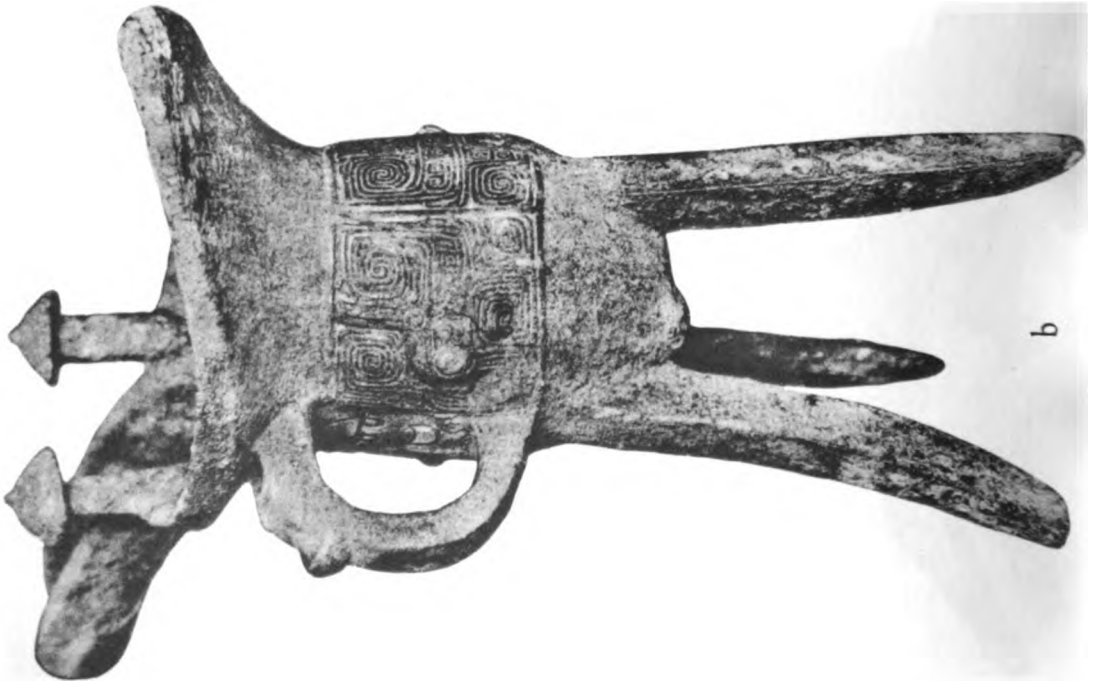
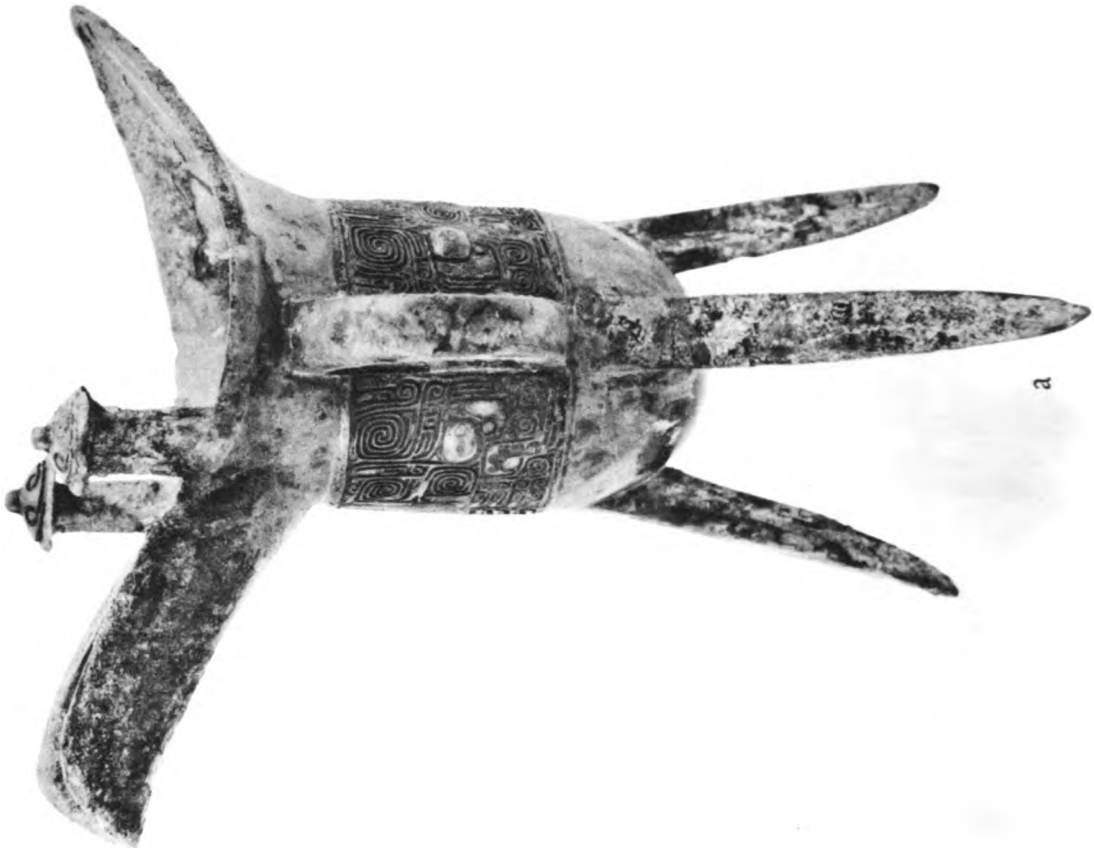
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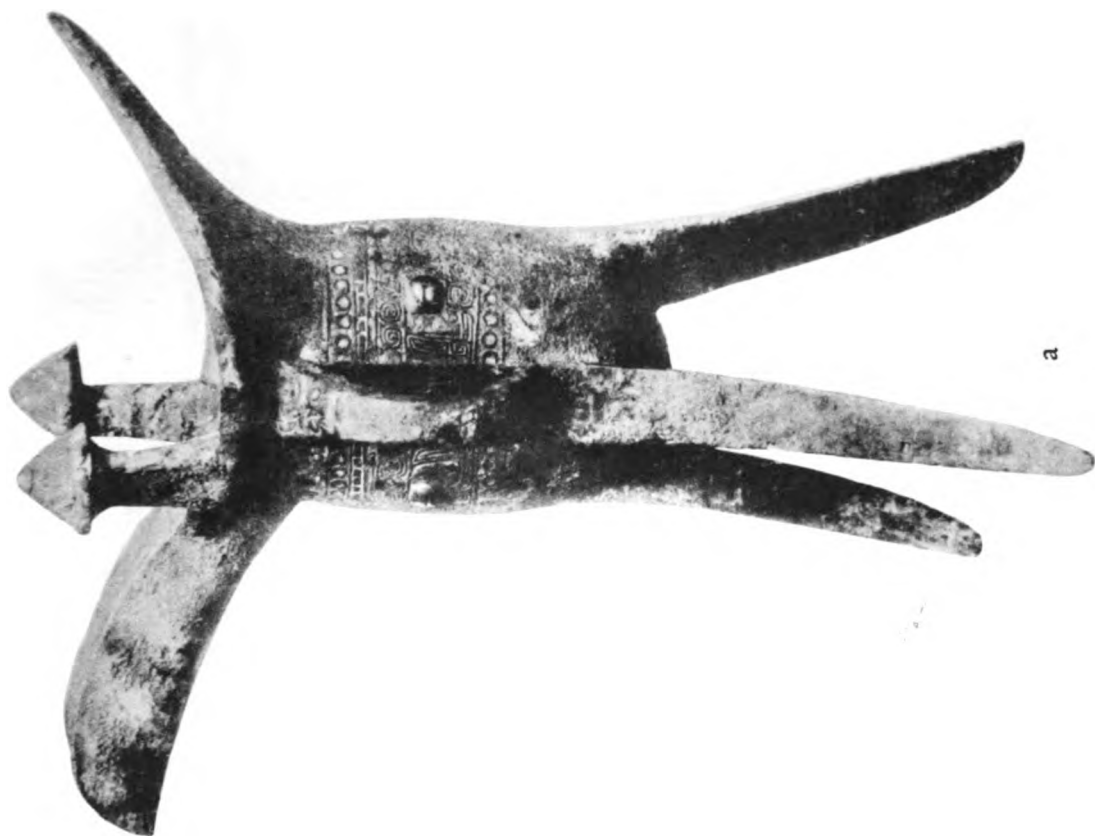




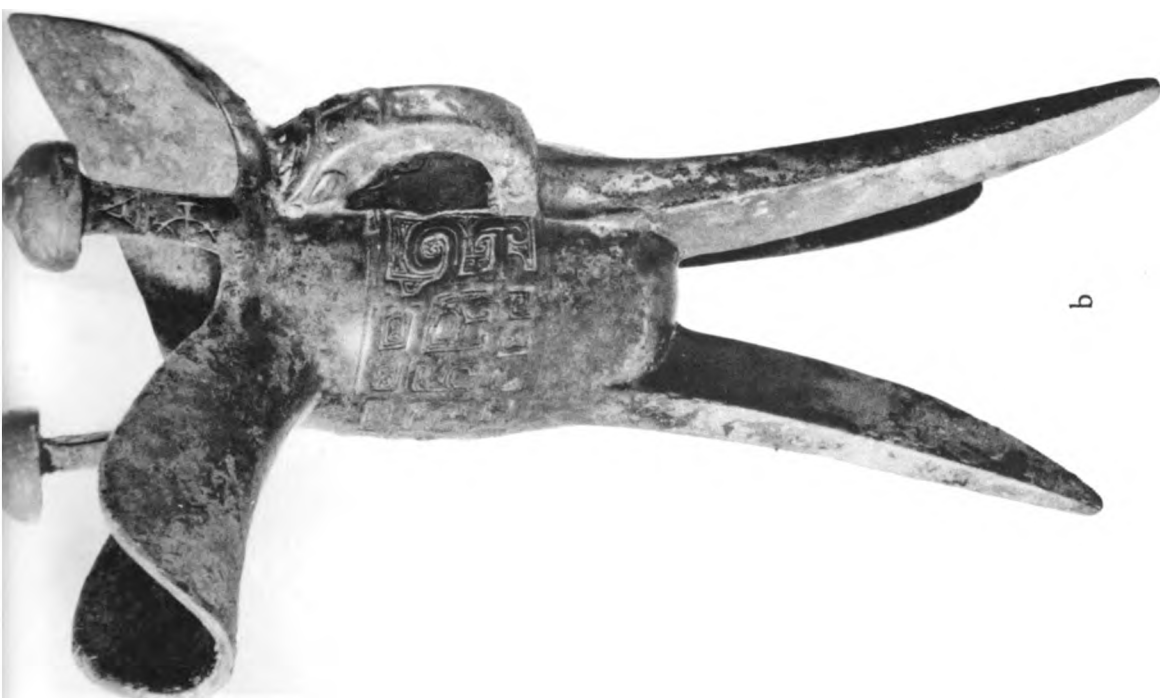




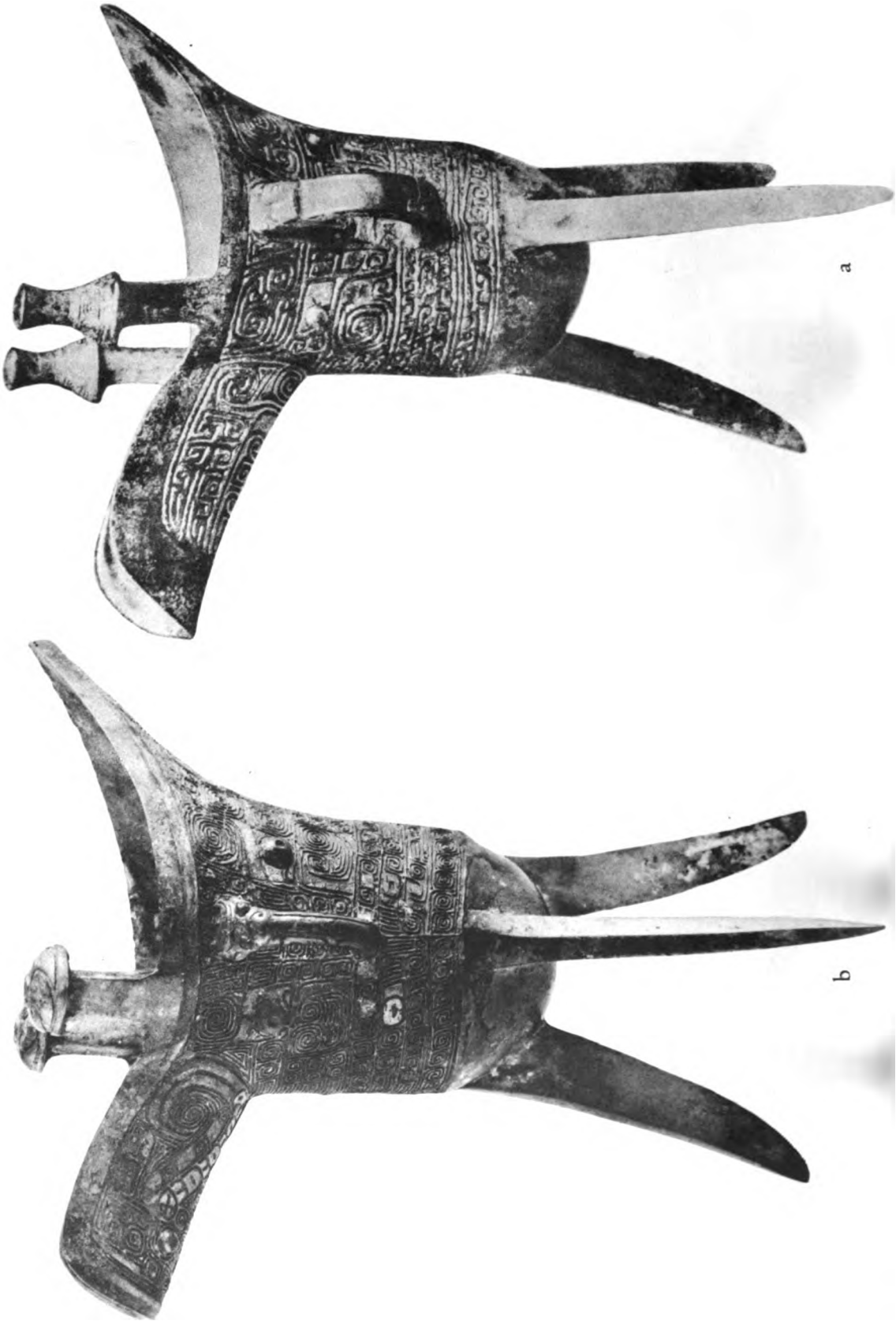


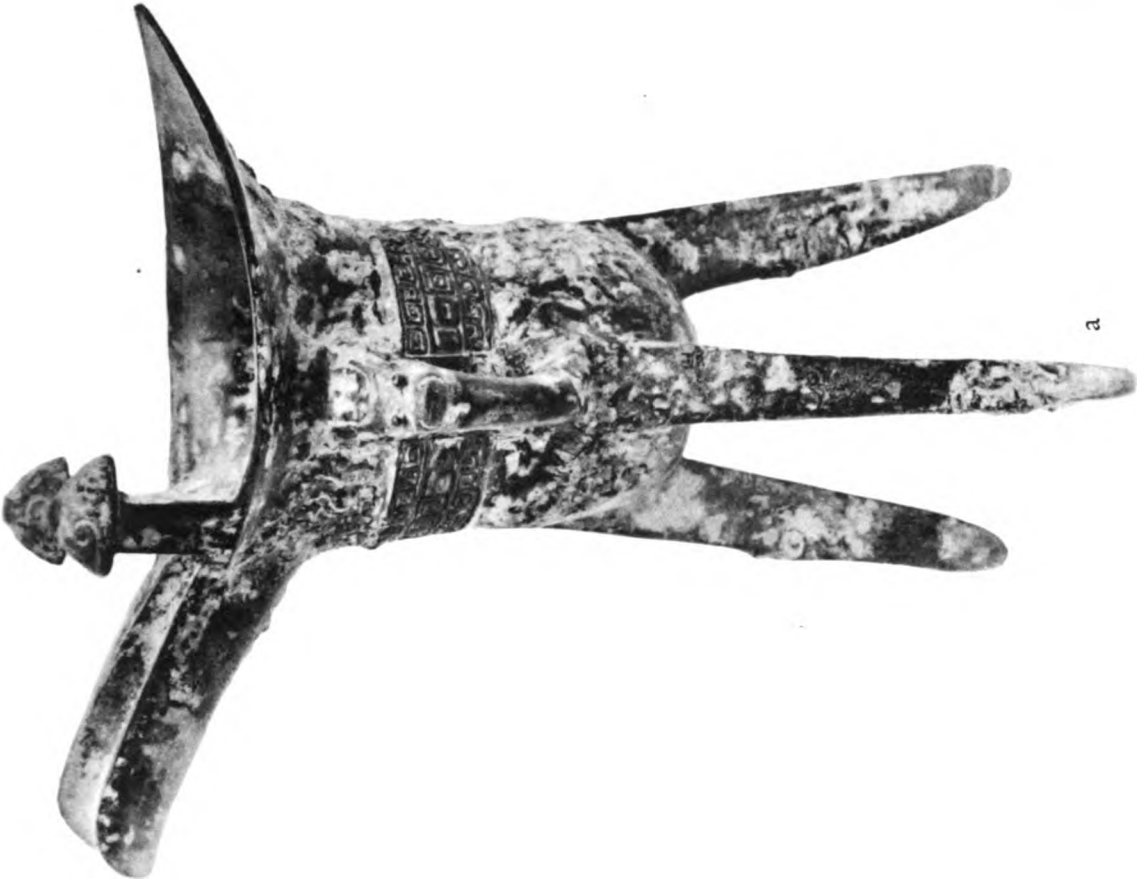


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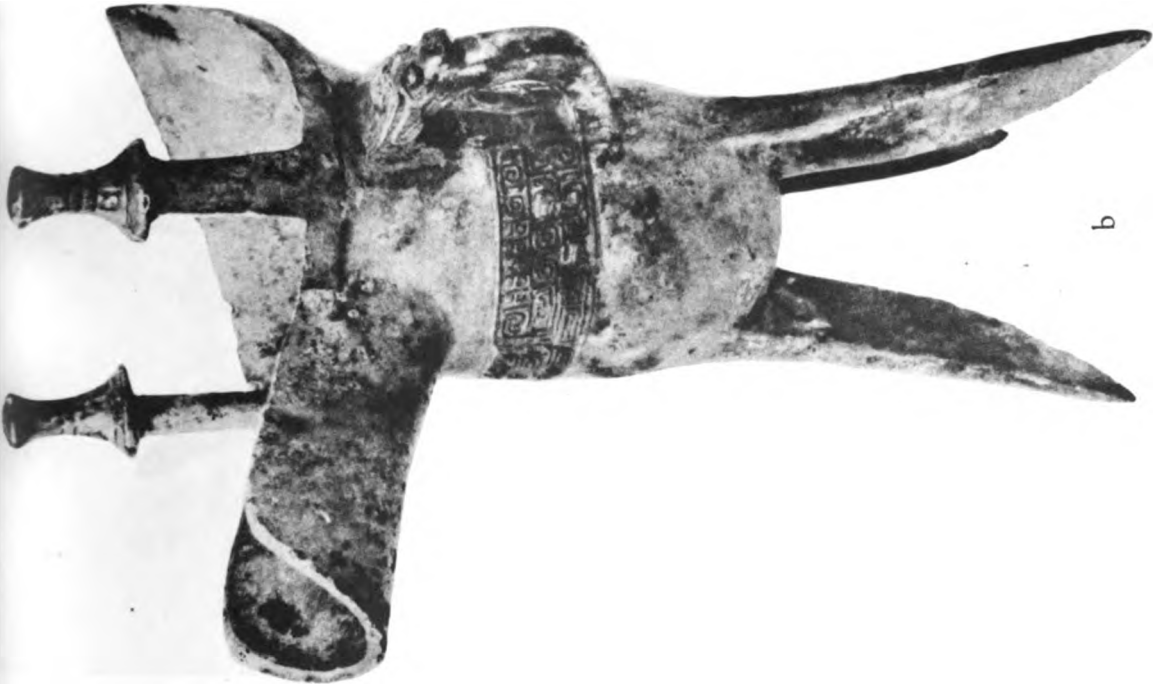


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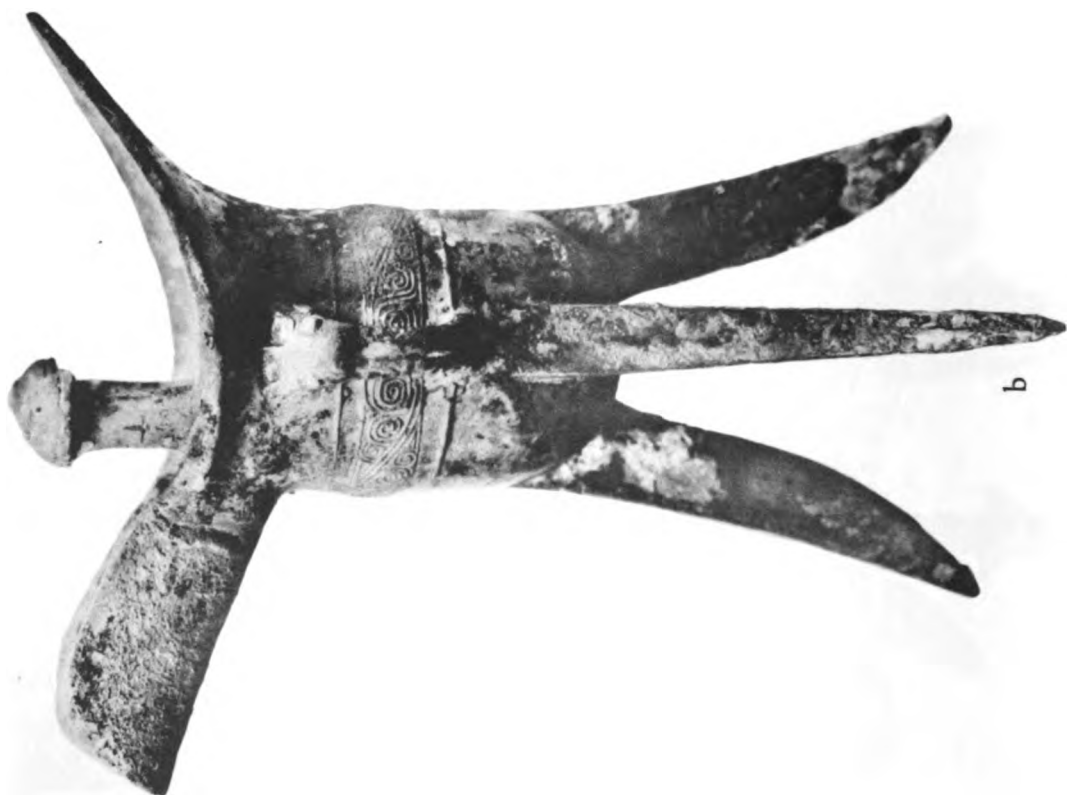
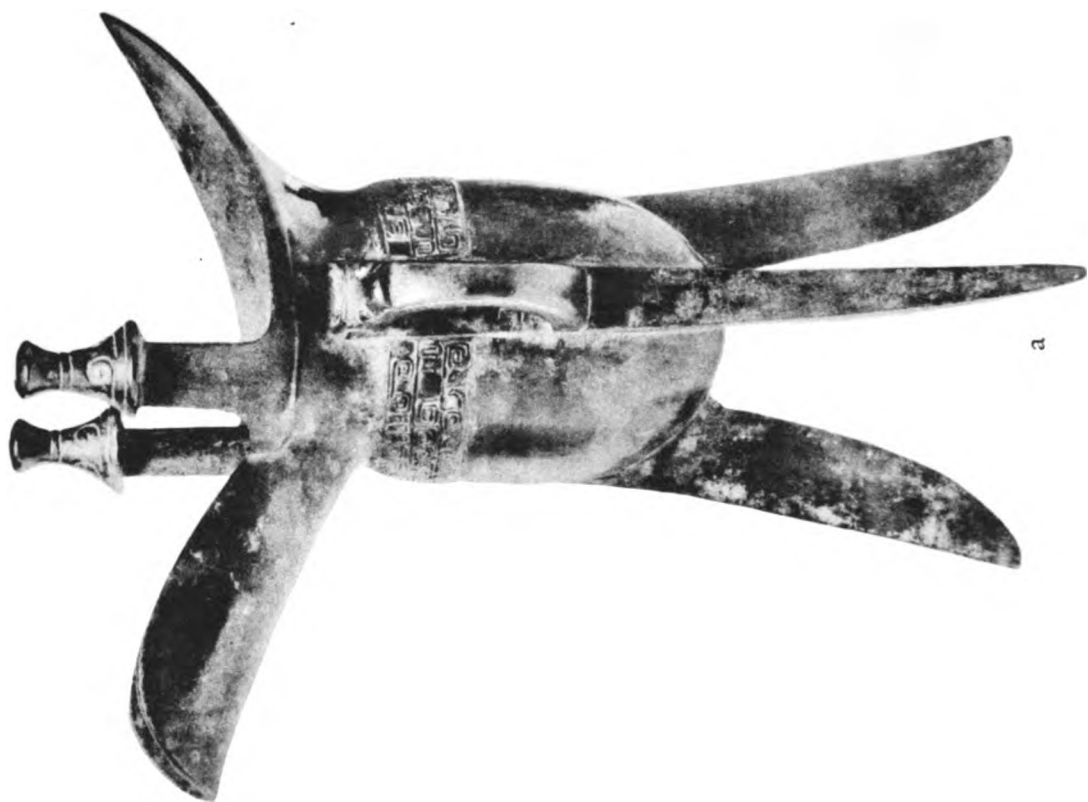


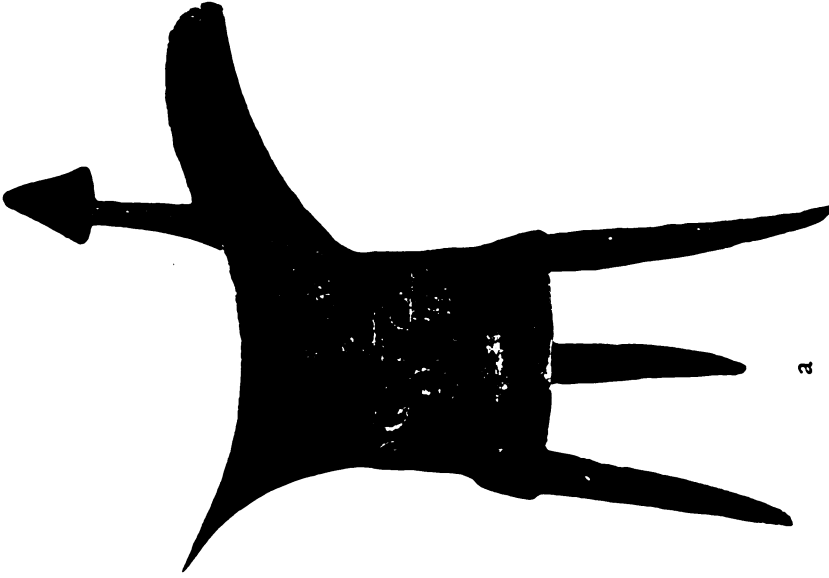


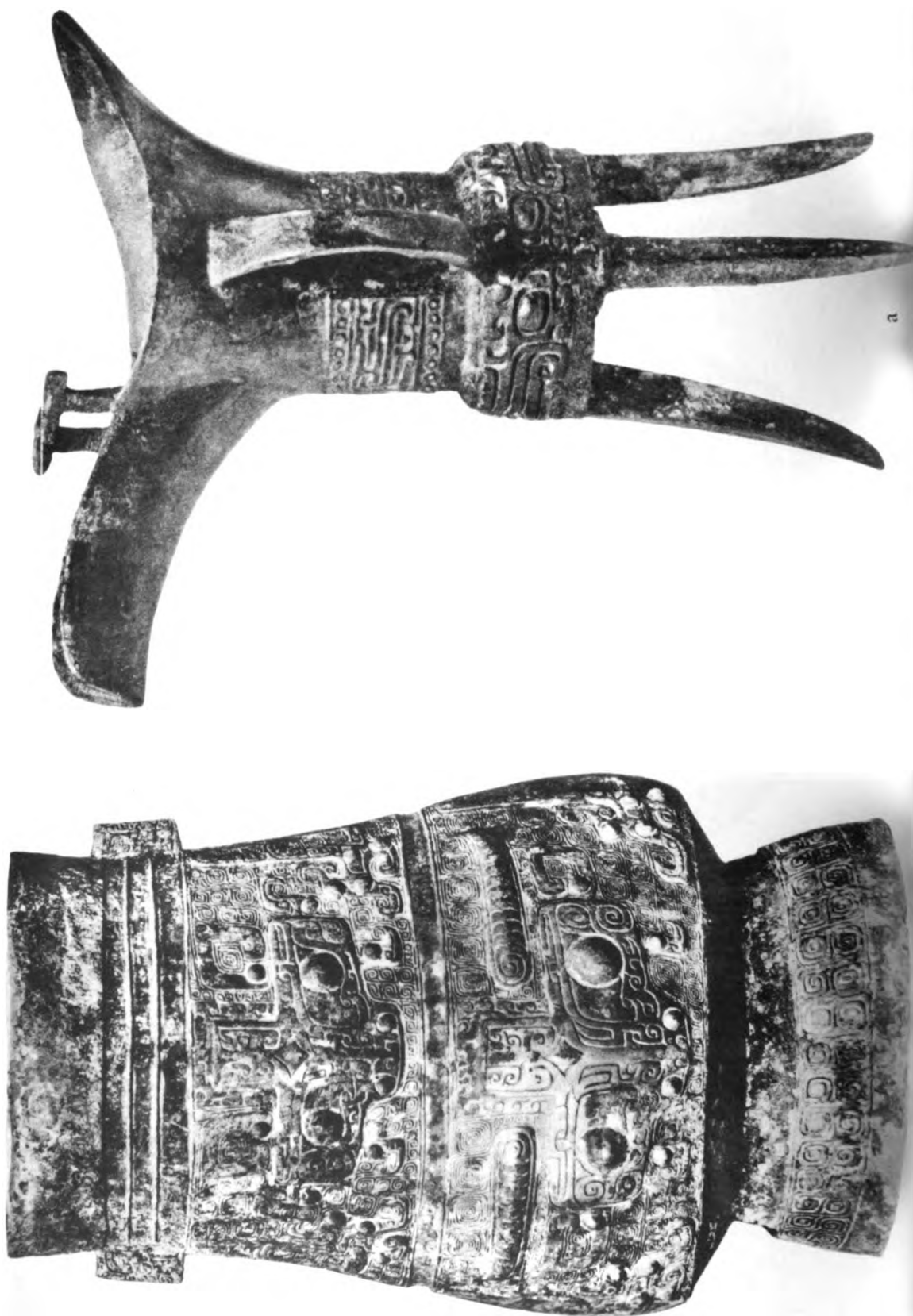
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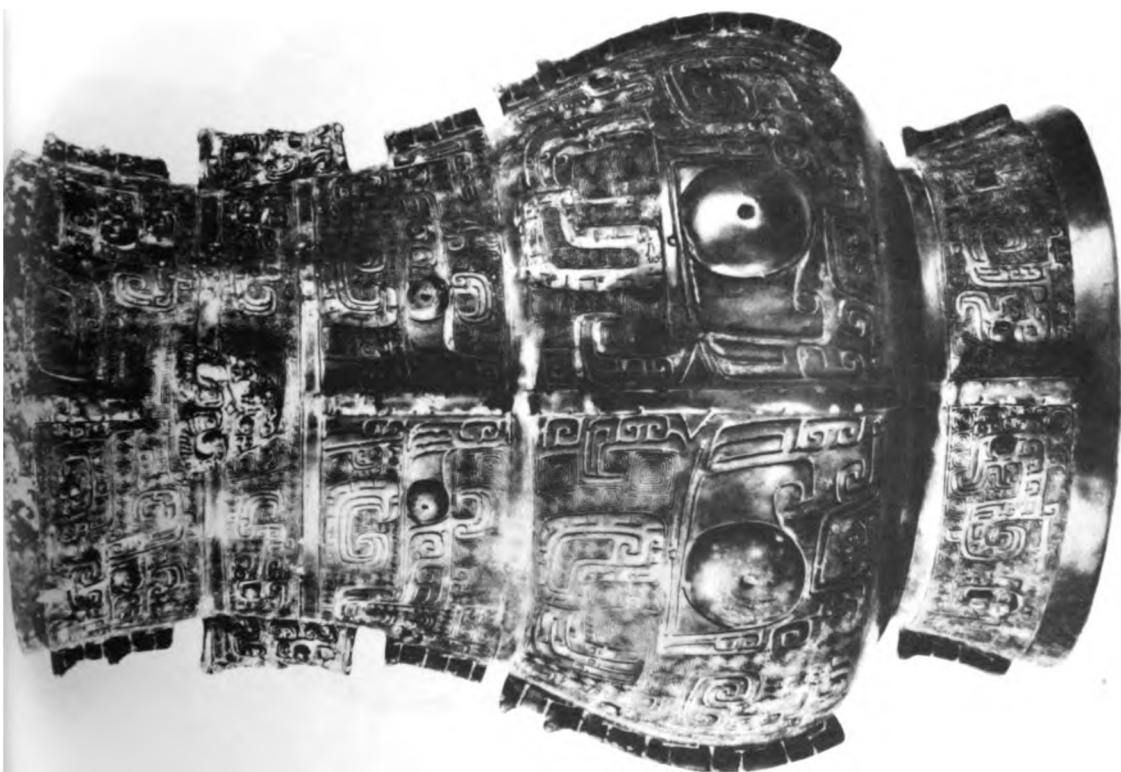








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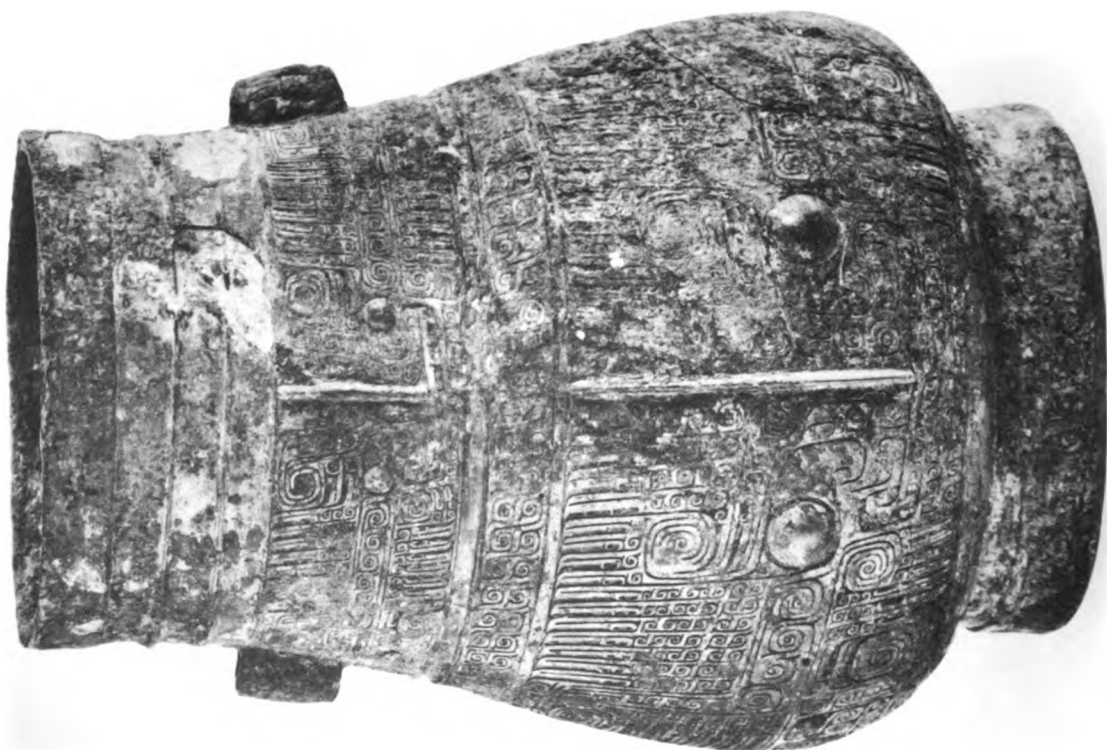
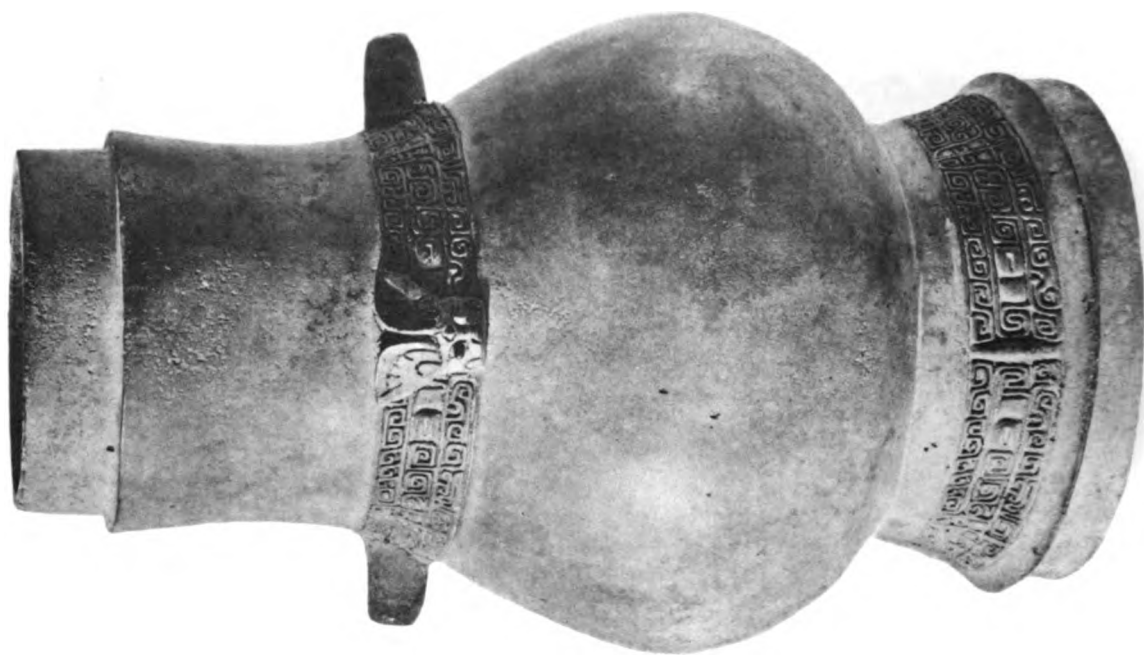
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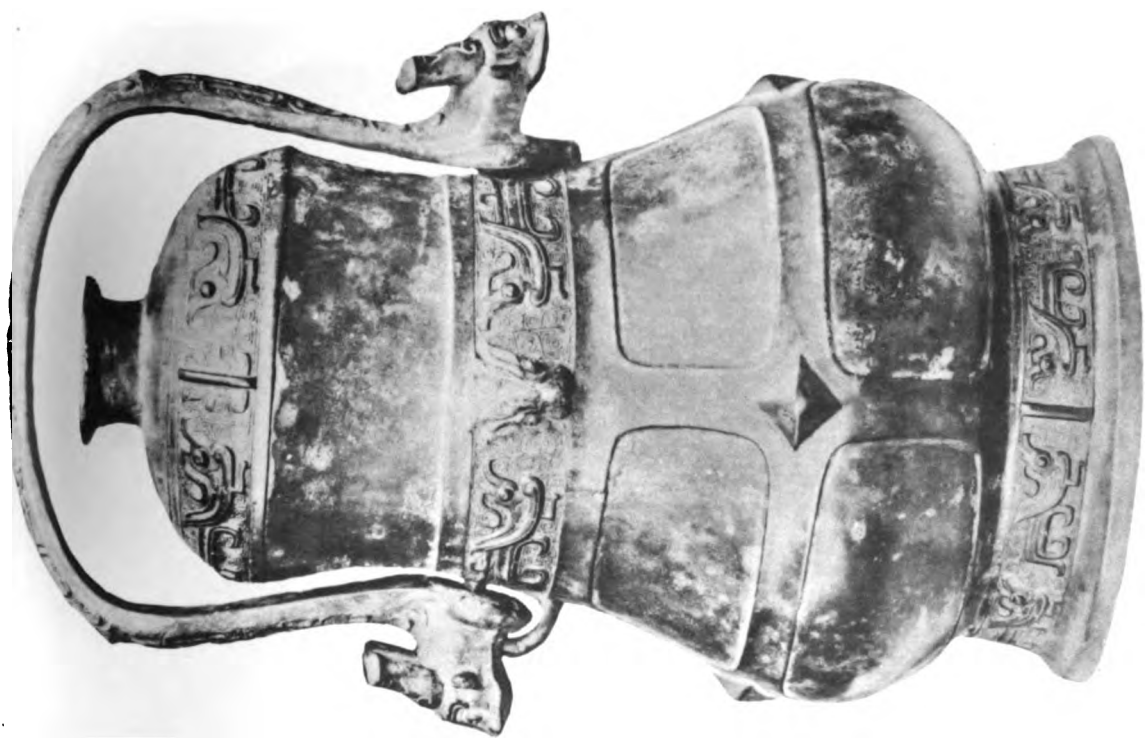








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Handbook







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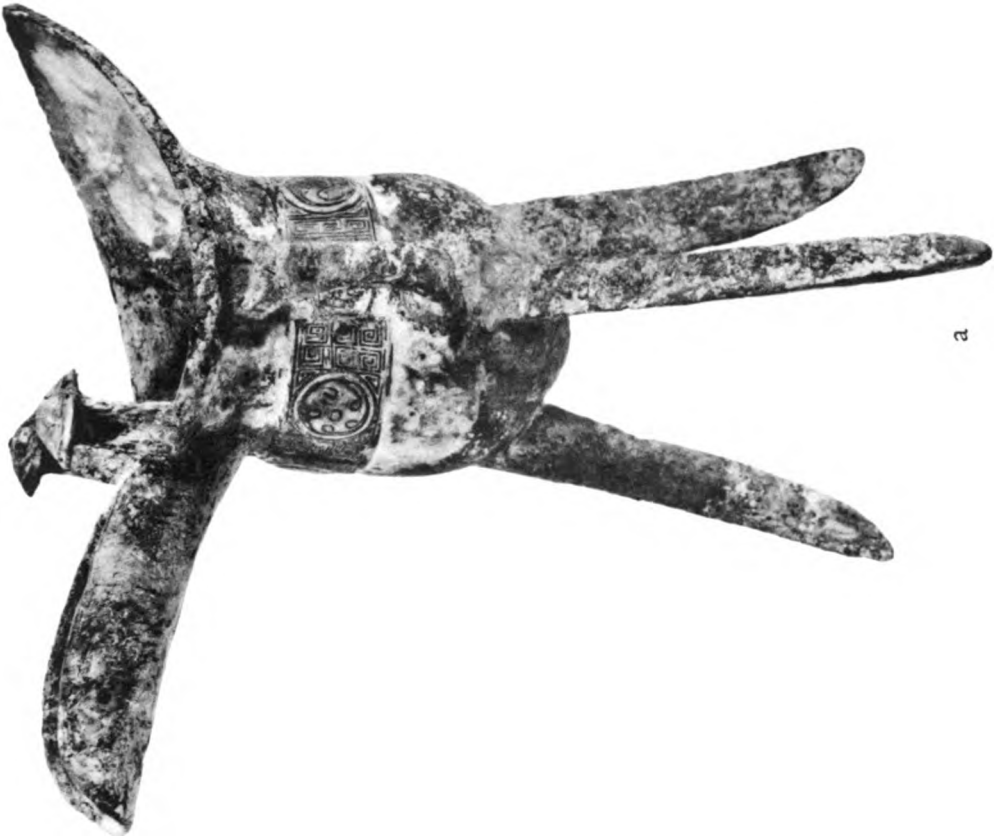


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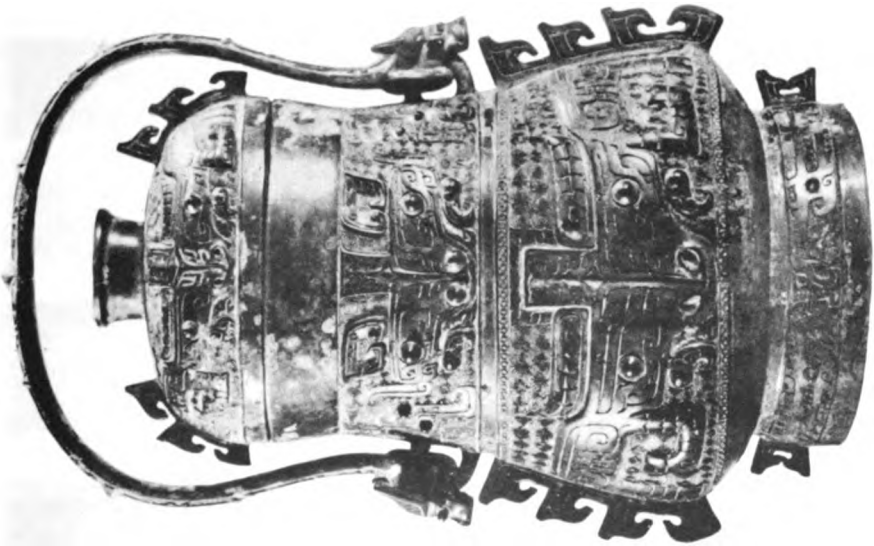


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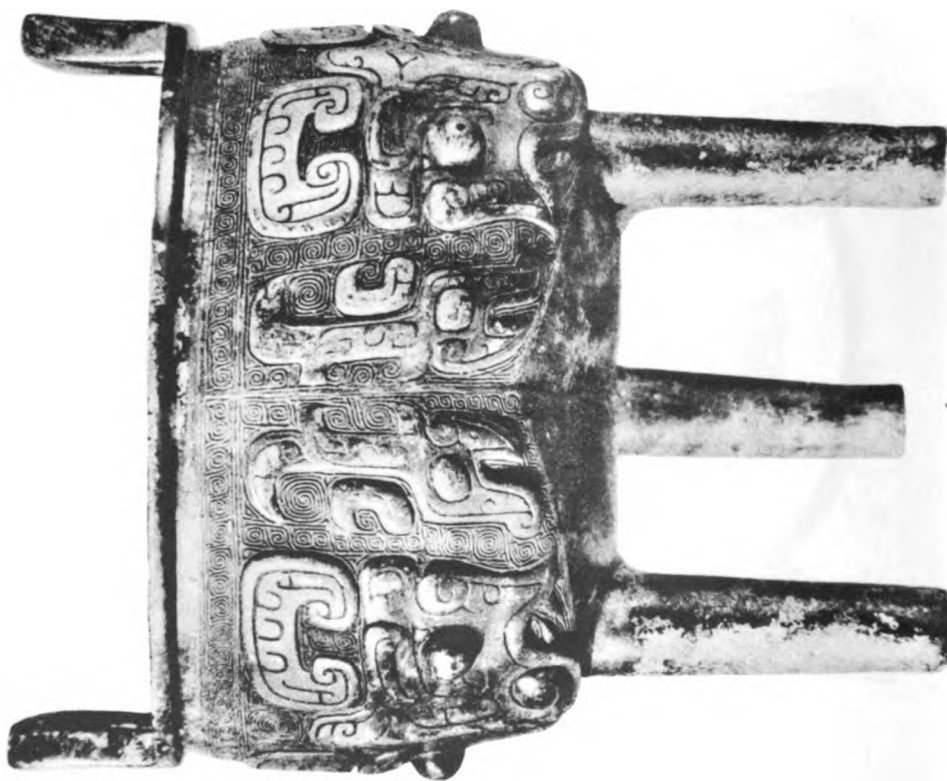


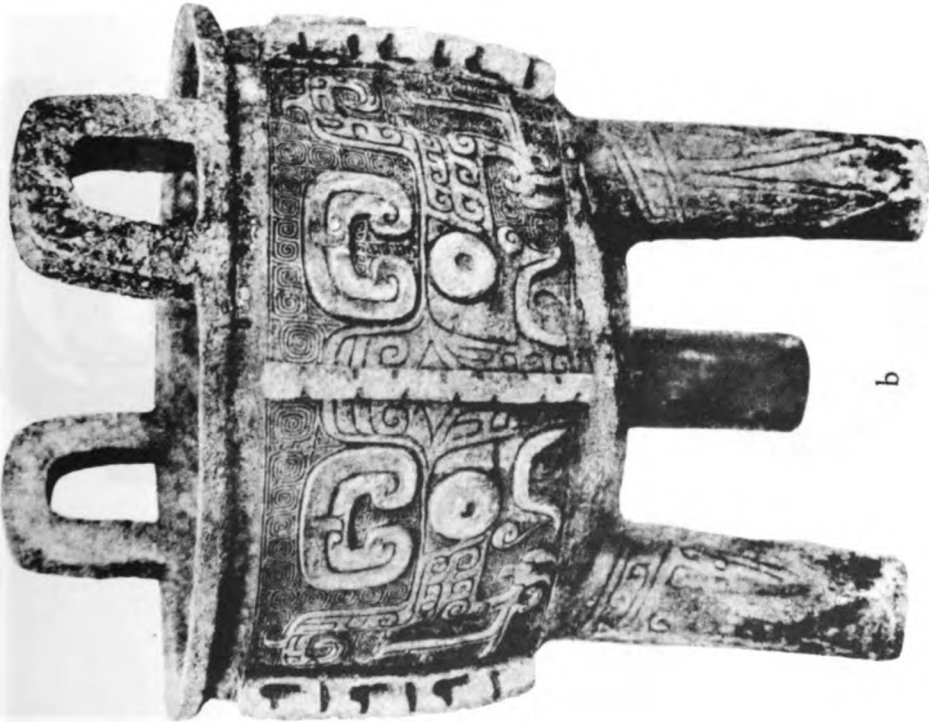
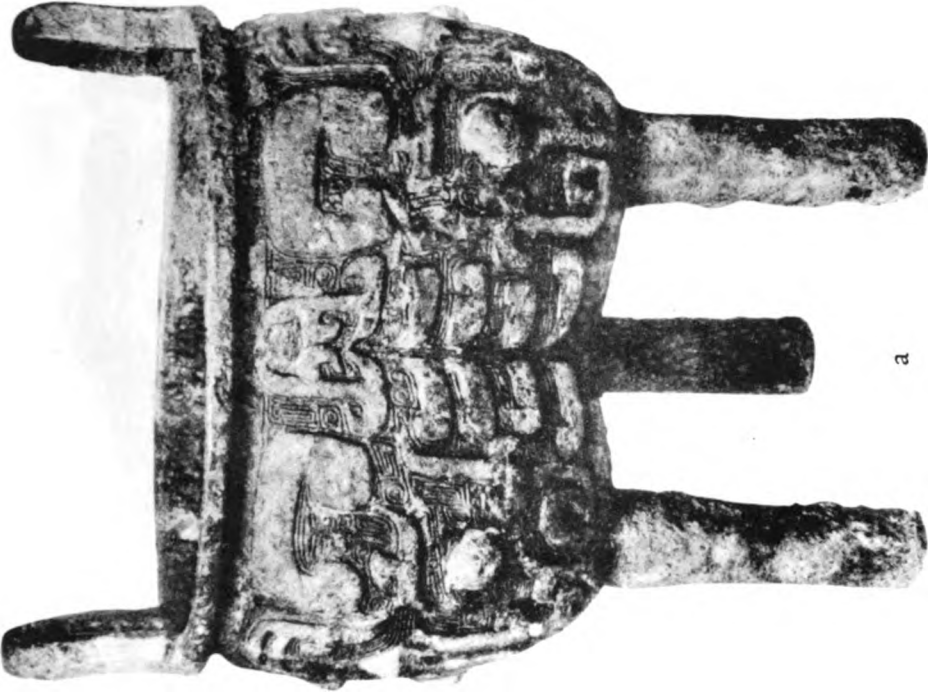


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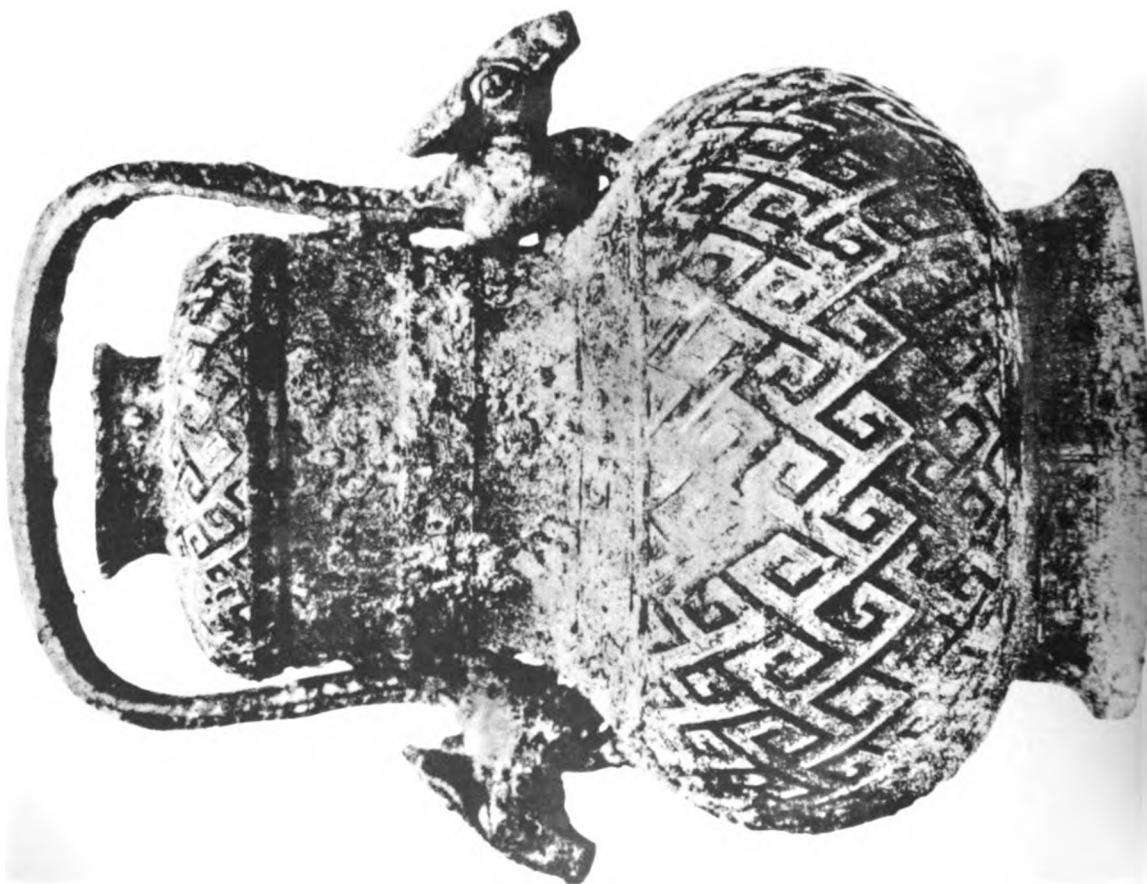
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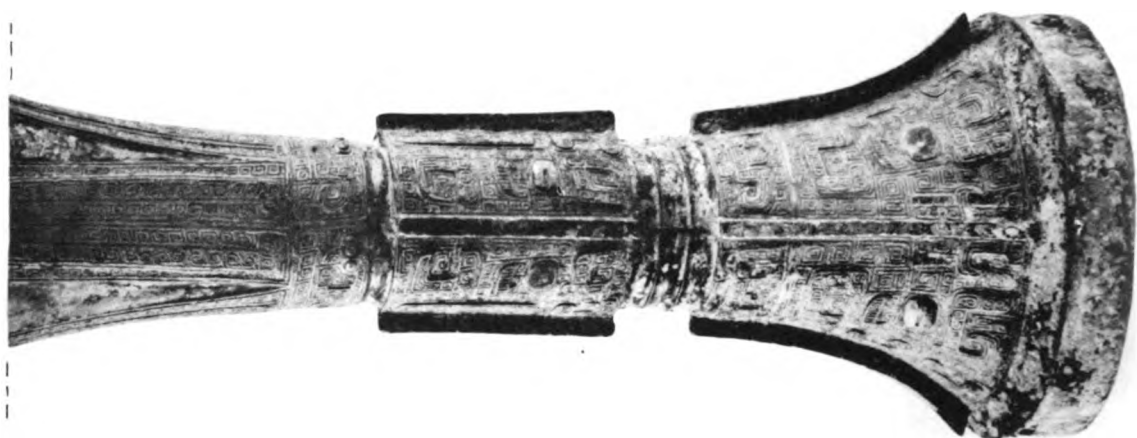
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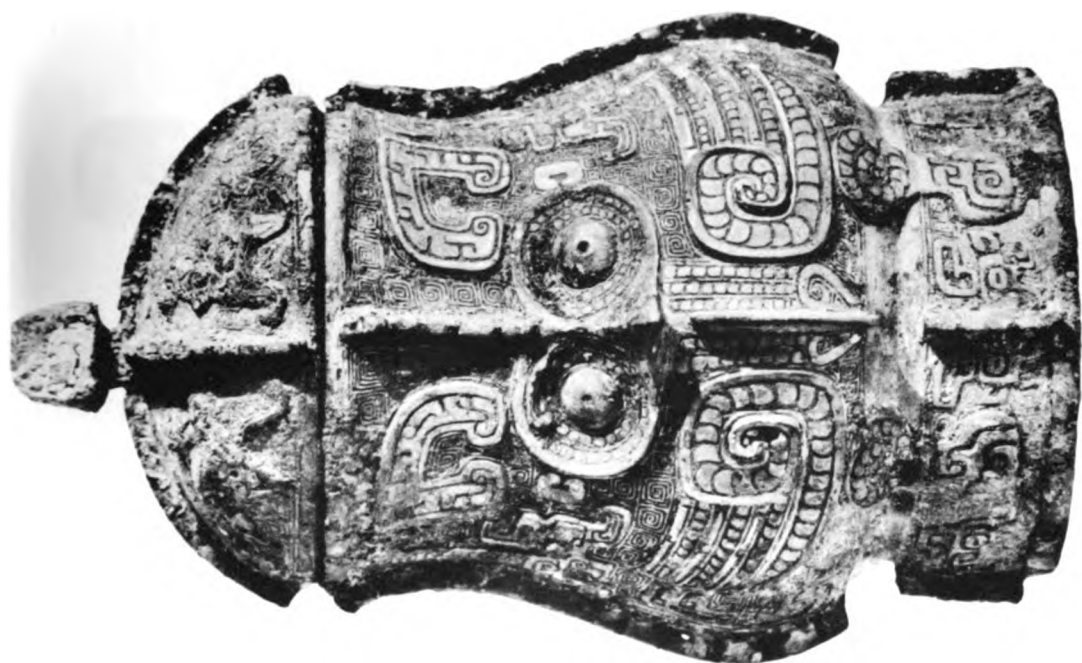


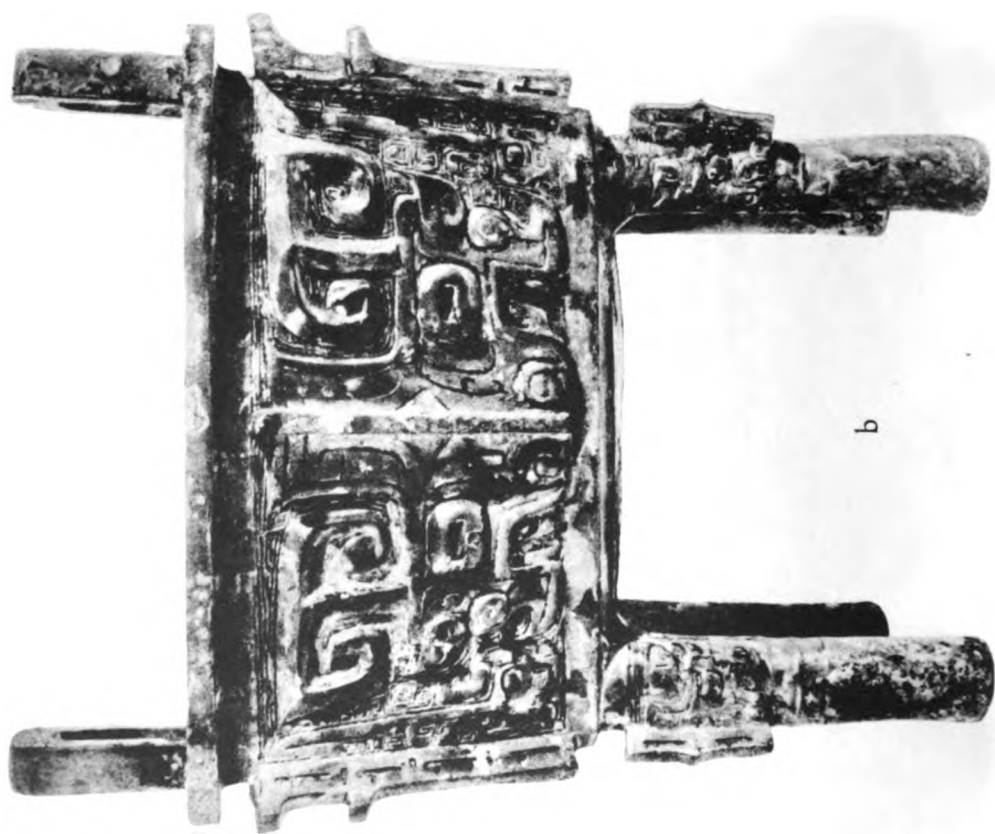
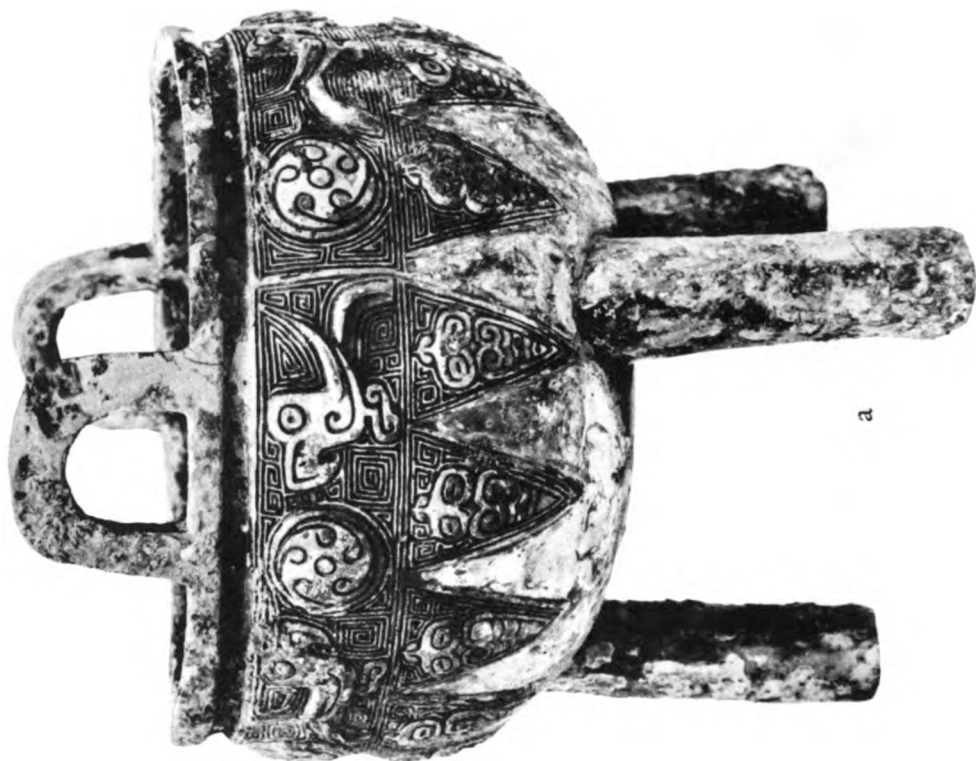
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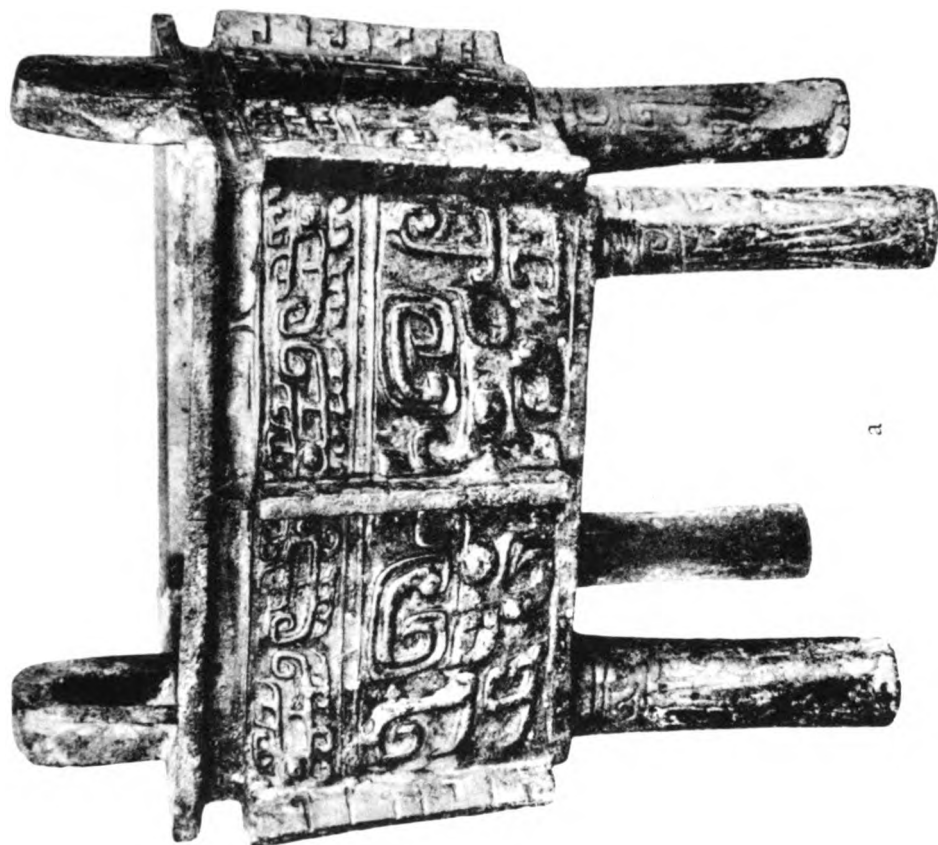
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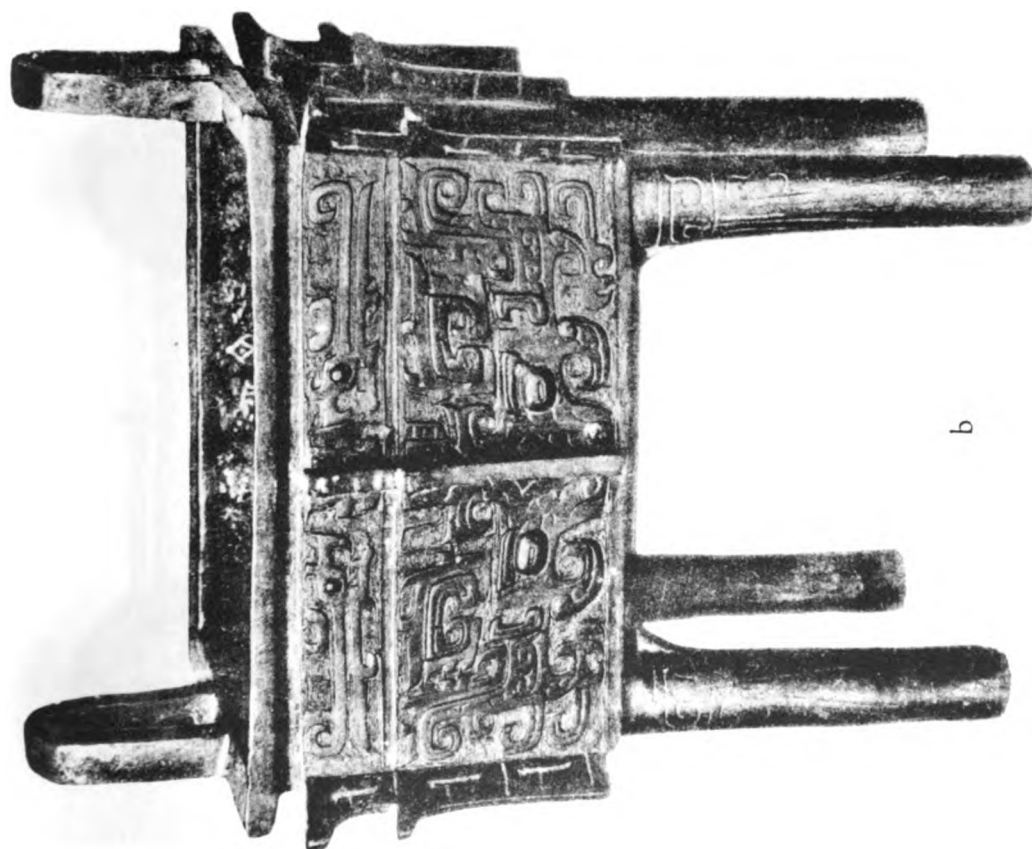




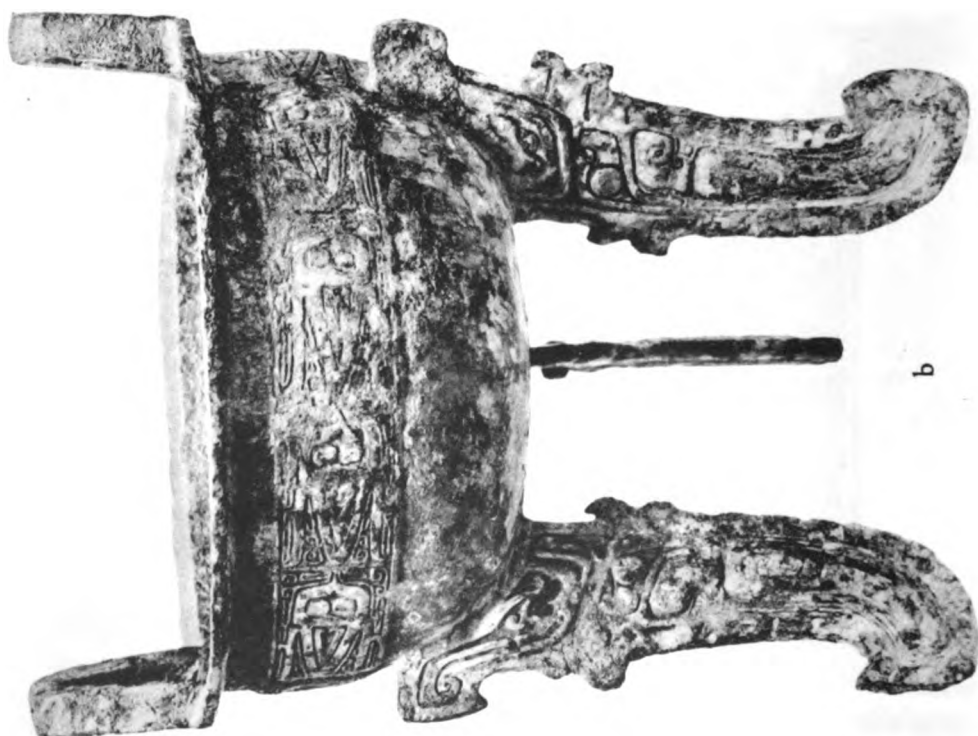
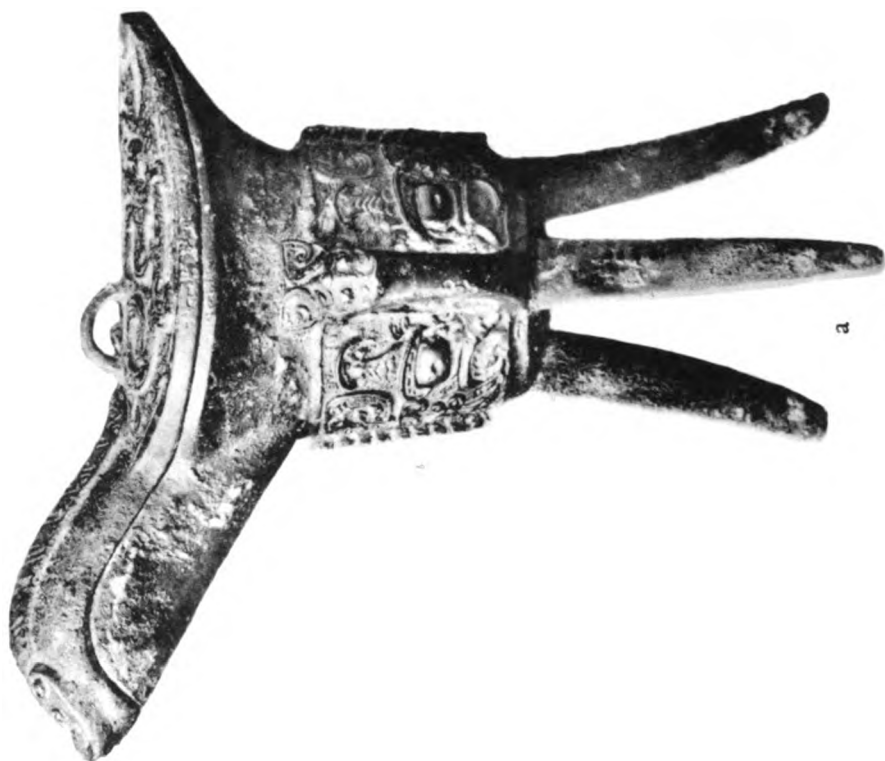


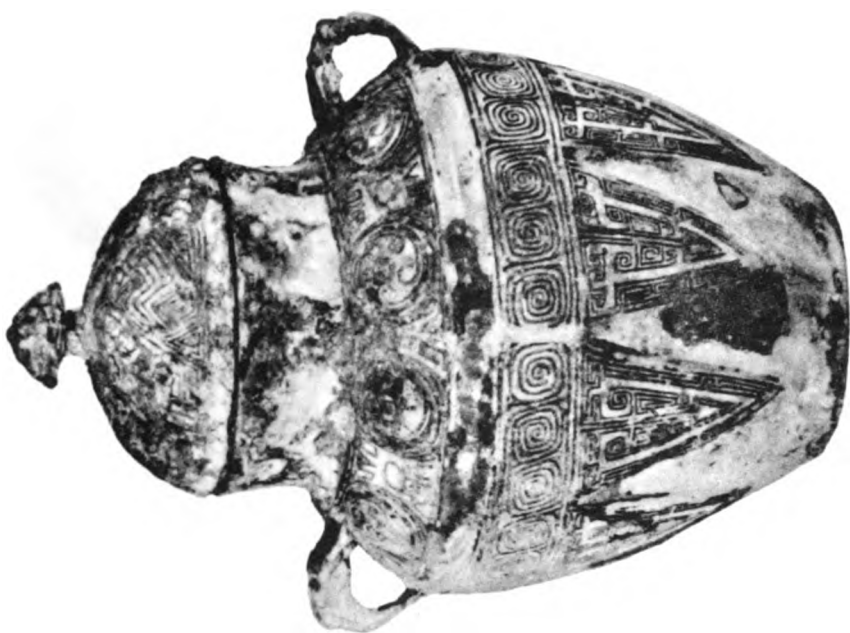


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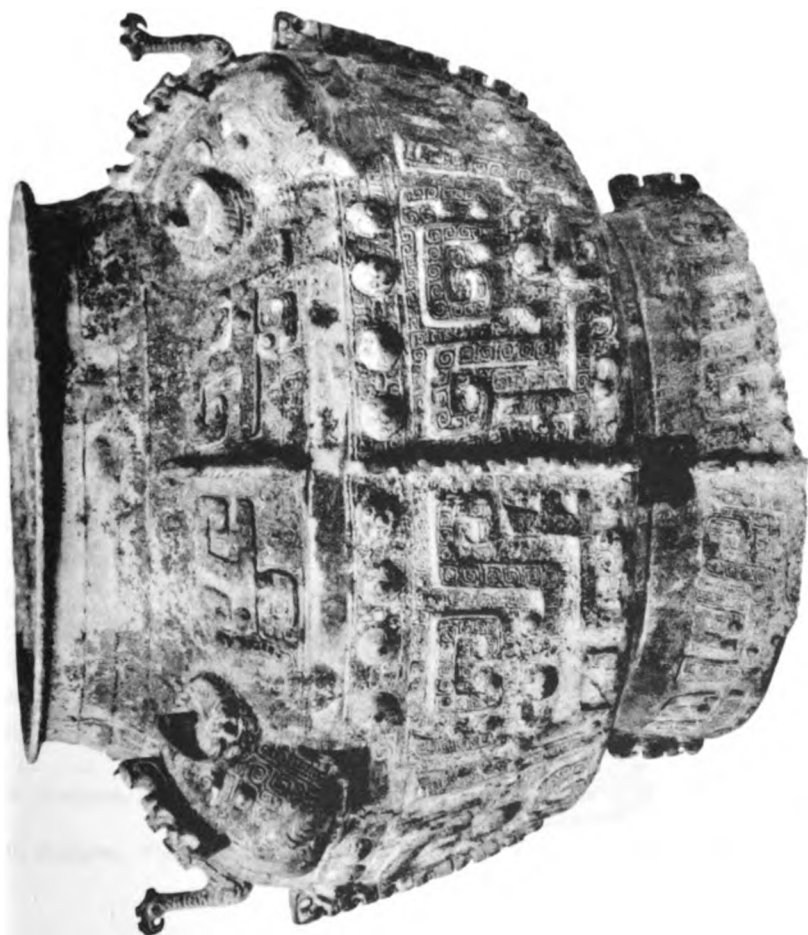


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THE FIRST FLORAL PATTERNS ON CHINESE BRONZES

BY

BO GYLLENSVÄRD

The comprehensive collection of early Chinese bronzes belonging to His Majesty the King of Sweden contains among other things a stylistically very interesting item reproduced in our plate I. It is a kind of finial consisting of a circular disc attached to a tubular handle, the latter with two loops for fixing. On the top of the disc is a five-petalled flower enframed by a plait pattern. The ovoid petals have a broad base, are pointed towards their tips and are closely set beside each other. A flat band with two incised parallel lines within it forms the outline. The surface is covered with scales arranged in four regular rows and at the base three small petals are inscribed. The scales and small petals are hatched with thin lines and the centre shows a broad zone inside the flat band which is covered with false granulation reminiscent of the stamen knobs, and five circular knobs, each on a flat disc. Inside the stamens is an indentation to hold some kind of inlay such as turquoise.

Undoubtedly this is the picture of a real flower, most probably a lotus (*Nelumbium Speciosum*), with the petals spread out in a way we are used to find in Buddhistic art from the centuries A.D. The handle is adorned with a double t'aot'ieh mask of a type that contradicts this dating. It shows clear similarities with the monsters found on many bronzes from the Huai Style period. As an example among many others we may mention the masks on the handles of the magnificent Chien vessels in the Pillsbury collection (Karl-gren, Cat.No.51, and the Freer Gallery of Art Cat. Pl.30) which come from Hui-hsien and can be dated not later than 543 B.C.¹⁾ (Pl. I c). It is astonishing to find the lotus pattern on a bronze about a thousand years earlier than might be expected, but a closer study of the Huai bronzes will reveal a whole group of floral patterns of a similar kind. The very details of the present décor show typical Huai traces. The plait pattern enframing the lotus is common on the Huai vessels and by Karlgren listed under No. 63 of Huai patterns.²⁾ Good examples of this motif are found on the Hu vases from Chi-hsien, which will be described later on (Pl. VI a). The vertical-scale pattern

¹⁾ B. Karlgren, *The Catalogue of the Pillsbury Collection of Chinese Bronzes*. Minneapolis 1952.

²⁾ B. Karlgren, *Yin and Chou in Chinese bronzes*. BMFEA, 8, 1936, p. 131.

is listed as No. 56 among typical Middle Chou patterns which were inherited by the Huai artists.³⁾ It is not so common during Huai and the hatched variety in particular is rarely found. It is exemplified on one of the Chung bells in Pillsbury collection, no. 59 (Pl. I d).

Another characteristic Huai motif is the (false) granulation which is now introduced for the first time on bronzes. Karlgren calls this pattern "granulation filling" and has listed it as No. II among the Huai motifs in "Huai and Han".⁴⁾

Several of the characteristic details on the bronze finial in question have indicated an early Huai date for the piece and further studies of flower designs in the Huai style will confirm this opinion. This bronze and a group of other small Huai style bronzes in His Majesty's collection provide fine examples of early floral patterns in the Chinese art and have induced the following study of this special field.

From various investigations of the archaic Chinese bronzes we have learnt that zoomorphic and geometric patterns are the only ones in existence. In vain we look for any floral design on the sacrificial vessels from Yin and early Chou and the same is true of the profane bronzes of that era.⁵⁾ When the Middle Chou style passes into the Huai Style a great change takes place. The exuberant baroque replaces the artistically poor and heavy Middle Chou. Many new patterns appear together with those inherited from the older style, and still others are taken up from the Yin and early Chou. Karlgren has carefully treated the fascinating transition to and the development of the new style⁶⁾ and also listed the various motifs. In the following observations we shall confine ourselves to one group of these motifs, namely those which can be called floral patterns. When they occur, they do not — with a few exceptions — play any predominant rôle in the total ornamentation, but they reveal the fact that several new patterns were now adopted which were quite foreign to the archaic bronze art.

A closer study of the Huai bronzes excavated during the past 40 years from such sites as Li-yü, Hsin-chêng Hsien, Ch'i-hsien, Huei-hsien, Chint'sun, Shou-chou and Ch'ang-sha gives the result that quite a large number of specimens are adorned with flowers in a more or less naturalistic rendering. A rosette flower of the type shown in Pl. I might naturally be expected to be found as the top decoration of a bronze vessel. When it appears on a Ting it is on the lid, as can be seen on a globular Ting in the collection of Mr Avery

³⁾ Karlgren, *op. cit.* p. 118.

⁴⁾ B. Karlgren, *Huai and Han*. BMFEA, 13, 1941, p. 28.

⁵⁾ Kuo Pao-chün in his Report on the last excavations at Anyang, published in *Chung kuo k'ao ku hsüeh-pao*, V 1951, has described a bronze Ko with textile fragments on the blade as being decorated with an "8-petalled flower ornament", but this pattern has nothing to do with a flower. In reality it shows what Karlgren has called "square with crescents" and has a zoomorphic origin (see his Pillsbury catalogue, p. 35).

⁶⁾ B. Karlgren, *Yin and Chou*, p. 149 ff.

Brundage (Pl. II b).⁷⁾ The four-petalled flower, Pl. II c, is the central motif on the cover and undoubtedly recalls the flower in Pl. I. It is simpler, with four instead of five petals, but these have a similar outline in the shape of a flat band, and here the surface is likewise adorned with a scale pattern. The scales have now obtained a false granulation instead of hatching, as on the quadrupeds from Li-yü in the Pillsbury, Freer and (formerly) Oppenheim collections.⁸⁾ Granulation is also used for the "stamen border" with spiral volutes as additional ornaments; moreover the centre is here sunk. In spite of the differences between the flowers in Pl. I and Pl. II b they must be classified within the same family. The Ting has a decoration on its sides which definitely places it in the early Huai-style period. The vessel has many counterparts among the bronzes from Li-yü and probably comes from that site.

A Ting of the same globular form but with incised geometrical pattern (originally inlaid with gold and silver) in the Pillsbury collection has a flower at the same place on the cover (Pl. II a). The bronze is described in Karlgren's catalogue under No. 49 and dated in the Huai-style period but without any determination of its origin or date.⁹⁾ Inside the top ring on the lid — which can serve as a foot when the lid is used separately and inverted — we find a double four-petalled flower of yet another variety. The top petals show a naturalistic design of a tree-like vein system (fig. 1). The outlines of these petals are much the same as those in Pl. I b and Pl. II c, and the central zone has (false) granulation which gives the idea of stamens in regular rows. Here too, sunk centre may have been intended to hold an inlaid stone. The type of decoration on the sides of the vessel is closely akin to that on the Chint'sun bronzes of an early date, viz. 6th—5th cent. B. C.

A third Ting with a floral pattern on the lid belongs to MFEA.¹⁰⁾ The cover of this small vessel has on the top a star-like rosette flower with six petals which are more strongly geometrical than the preceding ones (fig. 2). Each petal is a heart-shaped leaf on a short stem, attached to a circular double line, and inside this comes granular filling of the same kind as on the flower just described above. The date of this Ting is not easy to determine, but the relief bands around its belly and cover are of a somewhat later type. The closest parallel to this Ting is a Ho among the Cull bronzes (cat. No. 17) which is dated by Yettis to the 4th or 3rd cent. B.C. and is reported to come from Shou-hsien.¹¹⁾

The rosette flower in yet another variety is repeated around the belly of a Ting in the Fuji collection¹²⁾ which is very similar in type to those from Li-yü.

⁷⁾ S. Umehara, *Etude des bronzes des royaumes combattants*. Kyoto 1936, pls. XXX, XXXI.

⁸⁾ S. Umehara, *op. cit.* pls. XX, XXI.

⁹⁾ B. Karlgren, *op. cit.*

¹⁰⁾ B. Karlgren, *Some Bronzes in the Museum of Far Eastern Antiquities*, BMFEA, 21, 1949, pl. 23:1.

¹¹⁾ P. Yettis, *The Cull Chinese Bronzes*, London 1939.

¹²⁾ S. Umehara, *op. cit.* pl. XL.

The rosette has here rounded petals instead of pointed ones, but the centre is here likewise a granular band (fig. 3).

The most characteristic feature of the three flowers in Pls. I b, II c and fig. 3 is the naturalistic design, which is most of all reminiscent of a lotus. Another type of naturalistic flower, however, is also found on some small bronze objects of the same period, but in this case the flowers are modelled in full round and not in relief or incised. MFEA owns a bronze item of unknown use but probably having served as the cover of an incense burner (Pl. III a—c).¹³⁾ From an oval band serving as base, an openwork construction of interlaced dragons constitutes a dome with the dragons' heads peeping out in all four directions. The two largest dragons (or lizards?) are placed on top of the dome, the largest one with its head visible above a monster mask of an unusual type (Pl. III c). The monster has open jaws with large teeth, its tongue hangs down and the eyes are framed in by hatched bands; above this there are "warts". If this creature represents the front of the lid, the back has a smaller dragon, which appears under a double crescent ornament. On the long sides of the dome two more dragons have their heads protruding above a ring-ornament kept in place by the curling bodies of snake dragons. The tall bodies of the animals have incised parallel lines; at their meeting points are "warts", which have most probably held inlaid stones (turquoises or such-like). The most surprising feature of this specimen is, however, the four stems with star-like flowers, which rise up from the rounded corners. Each flower is an open chalice with five petals and the sunken centre has an edge suitable for holding a stone. The interior of the petals is adorned with parallel lines, which give the impression of being veins.

When Karlgren published this exquisite bronze, he knew of no parallel, but, in fact, there exists a similar piece belonging to Mr. Paul Singer, who has recently reproduced it in a descriptive article.¹⁴⁾ — fig. 4. — He describes it as follows: "The little piece in my collection (fig. 6) is not exactly the same as his (sc. Karlgren's in BMFEA). Here the lizards' heads have disappeared. The interlacing has become stylized and purely decorative; the flowers on their short stems have only four petals and not the remarkable five that his object has. Still we are obviously dealing with the same thing of the same period. Two loops on the underside show that it could be attached to some object that fitted the hollow. I cannot quite see it as a lid of a vessel, but have no suggestion on my part as to its use."

Judging by the reproduction in his article, Mr. Singer's bronze is more rectangular than the one belonging to the MFEA, and the dragons have obviously been deprived of their heads and changed into an interlaced pattern of snake-like curves with "warts" at many junctions. The flowers are indeed four-petalled instead of five-petalled, but for the rest they have the same

¹³⁾ B. Karlgren, Notes on four Bronzes, BMFEA, 26, 1954.

¹⁴⁾ P. Singer, The "unique" objects in Chinese art, Oriental Art, Vol. VII, No. 1, p. 32 ff.

shape of an open chalice and the "veins" are also there. As for the loops, they do not seem to contradict the idea of its use as an incense burner.

When dating these two ornamental bronzes it seems most probable that the piece belonging to the MFEA is the earlier one and Mr. Singer's the later. To determine the date of the oldest one is not easy, but certain patterns may come to our aid. First of all these types of dragons have counterparts on some bronze mirrors of an early date. In his study of early Chinese mirrors¹⁵⁾ S. Umehara has published several mirrors made in double layers with the back covered with an intricate pattern of interlaced dragons in openwork. Particularly the square mirror No. 1 in Pl. XXXIV shows lizard-dragons of a very similar type to those on our lid in the MFEA (fig. 5). The lizard-dragons move with the same freedom and asymmetry, and touch each other with their clawed feet. Each animal has four legs, a tall body and a long tail and is quite naturalistic. Even if the lizard-dragons on our bronze are somewhat more conventionalized, it is not difficult to make out each individual animal, and the two principal dragons are very much akin to those with four legs on the mirror. The heads of the dragons are broader and heavier on the lid than on the mirror, but they are not as flattened-out and as triangular as they frequently appear on Huai bronzes. The mirror is of a type that belongs to category A in Karlgren's series and consequently may be dated in the 6th—5th cent. B. C.

To the same kind of open-work design with interlaced dragons we can also refer a bowl and cover in the Fogg Museum of Art, formerly G. L. Winthrop collection, Pl. IV a. The body and the main part of the cover are decorated with freely curving lizard-dragons, the bodies of which have parallel lines and their crossing points are marked by "warts" with turquoises.

Often, when finding a Chinese piece of art which does not fit into the common patterns, we are prone to call it unique. Soon enough a counterpart appears, and a careful study then often reveals a group of kindred shapes or patterns.

The fantastic animal head with protruding tongue is found on a pair of silver mountings in H. M. the King's collection.¹⁶⁾ The tongue protrudes from a mouth with sharp teeth, Pl. IV b (fig. 6). An even better parallel occurs in the heads of a pair of wooden tigers from Ch'ang-sha, now in the MFEA, (Pl. IV c).¹⁷⁾ When seen *en face*, they have a great similarity with the bronze mask: the eye-teeth, the heavy framing-in of the eyes and the low forehead, features aberrant from the ordinary t'aot'ieh mask. The creature on the bronze lid is undoubtedly meant to be a tiger.

When Karlgren published this bronze he drew attention to the similarity between the flowers here and those found on several Huai-style mirrors,

¹⁵⁾ S. Umehara, *L'Etude sur le miroir antérieur à la dynastie des Han*. Kyoto 1935.

¹⁶⁾ N. Palmgren, *Selected Chinese Antiquities from the Collection of Gustaf Adolf Crown Prince of Sweden*. Stockholm 1948, pl. 24:4—5.

¹⁷⁾ B. Karlgren, *Miscellaneous Notes on some Bronzes*, BMFEA, 33, 1961, Pl. 92.

datable in the 3rd cent. B.C. (his category C nos. 30, 31, 80, 81). "But", he says, "whereas the mirrors have quatrefoil flowers, our specimen here shows flowers with five leaves, a very unusual variant." We shall revert to those mirrors later on, but already now we wish to move back the date, for the reasons just stated. Probably this bronze should be considered contemporary with the mirrors of category A, i.e. the 6th or 5th cent. B.C.

The star-shaped flowers on the bronze in Pl. III recur in other connections on small bronzes. A circular plaque in H. M. the King's collection has a similar flower in the centre (Pl. V a). It is described by Palmgren in his catalogue¹⁸⁾ (his Pl. 23:4) as "A circular bronze disc with eyelets attached forming a cross. . . The décor is in low relief. In the centre are found interlaced snakes surrounding a four-petalled flower. This central portion is surrounded by a continuous spiral border, Fig. 96." Our fig. 7 gives the details more exactly and shows how the flower has the same "veins" on the petals as on the specimens described above and the central indentation surrounded by a zone of stamens in false granulation. Here again we get the impression of a real flower. The snakes are fat and their bodies are adorned with slanting lines on both sides of a central edge. Each tail ends in a hook, and the heads are almost triangular, seen from above. A similar snake is found on a foot of a Ting from Li-yü, likewise in His Majesty's collection (cat. Pl. 17:1), our fig. 8.

Very close to the plaque just described is another one excavated at Huei-hsien in the early '50s and reproduced in a drawing, fig. 9.¹⁹⁾ The similarity is so close that it seems logical to attribute the same origin to the preceding plaque. A Huei-hsien origin cannot, however, entail a dating, since the bronzes found in Huei-hsien during the excavations in the '50s represent various periods from Yin to Han and the tomb in question is only recorded as "Warring States". As already stated, the dragons are very similar to those found on the Li-yü bronzes and also to a type of dragons found on early mirrors of Karlgren's category A, e.g. Umehara, Pl. XXXIII:2.²⁰⁾

To the same group belongs the bronze plaque in the MFEA, Pl. V b, on which the snakes are thinner and constitute an interlacy pattern in open-work around the four-petalled flower. Corrosion has obscured the details of the flower, but it seems to be very similar to that in fig. 4. The slanting parallel strokes on the bodies of the dragons have been changed into parallel lines, as on the bronze in Pl. III. The outer zone also has a different décor, consisting of volutes and triangles of a typical Huai character.

On the bronzes here described the floral pattern has been used as a central motif or else symmetrically arranged. Reconnoitring for other places suitable for a flower décor of this kind, we might expect to find it at the end of a handle, a staff or some similar object. Now, among the gilt bronze finials for poles or wooden handles found at Chin-ts'un there are some very fine tubes with a

¹⁸⁾ N. Palmgren, op. cit. pl. 23:4.

¹⁹⁾ Huei-hsien ch'u t'u ch'i wu t'u an. Peking 1954, p. 7.

²⁰⁾ S. Umehara, L'Etude sur le miroir antérieur à la dynastie des Han, 1935.

flower bud, Pl. V c. d. The petals have been arranged in two whorls, one outer with four short leaves and one inner with four tall petals in open-work, ending in a pointed and out-turned flap. A glass bead is attached to the top of the chalice. This composition makes quite an elegant use of the flower, which is probably a lotus, fig. 10.²¹⁾

Four other small fittings were excavated at Chin-ts'un and have been published by Umehara.²²⁾ Two of them are finials for narrow tubes. Each finial terminates in an elegant flower similar to those in Pl. V c, d but there is only one row of petals, which make a fine quatrefoil seen from above, Pl. VI a, b. Instead of a glass bead there is an animal's head in high relief. A hook protrudes from the tube and the whole bronze is gilt. The *other pair* of fittings are of a similar shape but with a dragon's head holding the flower in its open jaws, Pl. VI d. Four- or five-petalled flowers are also found as top ornaments in other material. Thus, from Old Lo-yang White²³⁾ has listed (under No. 153 a, b) a pair of wooden knobs with a six-petalled flower carved on the top. His description is as follows: "They were both lacquered a dark brown, and were carved in hexagonal floral shapes, with a circle in the centre containing comma-shaped emblems. (a) The hexagonal floral sections of this knob were decorated with patterns in red pigment, and the centre was inlaid with a gold disc of fine granulated work, in the design of a two-comma magatama." (b) The hexagonal sections of this knob were carved in pendant foliate designs, and the magatama in the centre was carved on the wood in a double-comma form." White's reproductions of the knob are, however, not very clear, giving only a faint idea of the details.

The six-petalled flower could also be reproduced in jade, as in fig. 11. This comes from Shou-chou and is a very nice rendering of the motif, in which the petals have the characteristic shape of the lotus.²⁴⁾

Another application of the flower-petal motif occurs on the bronze socket terminals with birds in high relief from Chin-ts'un, Pl. VI c. Here a whorl of petals is placed around the opening.²⁵⁾

The naturalistic flower could thus be used on various bronze objects during the Huai Style period. When once our eyes have got into the habit of discovering flower petals in various zoomorphic and geometrical patterns, there may be a risk of imagining them everywhere. It was with great hesitation that I first adopted the idea that the well-known coronas adorning so many of the Hu vases from this period could likewise be interpreted as a flower chalice. One of the best examples in proof of this assumption is offered by a pair of Hu vases in the Cull collection, Pl. VII a.²⁶⁾ Yetts has given a thorough de-

²¹⁾ S. Umehara, *Lo-yang Chin Ts'un ku mu chu ying*. Kyoto 1936, pls. LVIII, LIX.

²²⁾ S. Umehara, *op. cit.* pl. LXVIII.

²³⁾ W. Ch. White, *Tombs of old Lo-yang*. Shanghai 1934, p. 95.

²⁴⁾ O. Karlbek, *Selected Objects from ancient Shou-chou*, BMFEA, 27, 1955, pl. 60:9.

²⁵⁾ S. Umehara, *Lo-yang Chin Ts'un ku mu chu ying*. Kyoto 1936. App. pls. IX, X.

²⁶⁾ W. P. Yetts, *The Cull Chinese Bronzes*. London 1939.

scription of the vessels in his catalogue and about the corona he says: "The circlet is seen to have eight out-curved projections, shaped like the petals of a flower, uniform in size and design. On Plate XVII a photograph taken from above shows three of the petal-shaped projections and their decoration of dragons in slightly modelled relief." Then he enters into a lengthy discussion of the decoration of the vases and records parallels on other bronzes. He states that the pair of Hu hail from Chi-hsien, "almost certainly being produced 482 B.C. — or soon afterwards."

Similar Hu vases with coronas at the rim are found among the vessels from Chin-ts'un, Hsin-cheng and Shou-chou. Before discussing these, however, I should like to mention a Hu vase in the former Eumorfopoulos collection, of unknown origin but of special interest in this connection, Pl. VII b. Yetts has described the bronze in his catalogue²⁷⁾ under No. A 33. It has an inlaid décor of gold and niello of a type well-known from the Chin-ts'un finds. Around the belly are flat bands; t'aot'ieh masks are holding rings. Above the mouth there is a corona made of a bulging ring from which rise six petals. The petals have the same outline as on the flower in Pl. 1, but they are executed in full round and decorated in open-work. As an additional adornment there is on the lid — inside the corona — a stalk terminating in another flower with four petals. Here it is obvious that the artist wished to achieve a floral arrangement for crowning the vase. When Yetts wrote his catalogue the only bronzes he could adduce as parallels were the Hsin-cheng vessels, at that time only recently excavated. He dates the vase as "probably Han", but now we have no reason for placing it later than Huai, probably in the 5th century B.C. The inlaid patterns have many similarities with those on the Chin-ts'un bronzes examined by Andersson.²⁸⁾

With the Hu vessels from Chi-hsien and the last-mentioned Hu as a background it is easier to accept the coronas on some other bronzes as being floral motifs. From Chin-ts'un emanate two Hu vases of a type similar to the inlaid one but with a relief décor of comma patterns in bands around the belly, Pl. VIII a.²⁹⁾ They have a corona with six petals in open-work turned gracefully out-ward, the design of each leaf consisting of interlaced dragons. The petals are fixed directly on the flange, which makes them more conventionalized than those adduced above, see fig. 12. Anyhow, the impression of the corona is that of an open flower chalice. An important point in regard to these bronzes is the inscription, which probably dates them in 562 B.C. Among the Chin-ts'un vessels there are also a pair of square Hu vases of an early type, both crowned by flower-shaped coronas, Pl. VIII b. They must be from about the same time as the other vessels, although here the relief décor consists of a band with dragons instead of comma patterns. The same petals re-

²⁷⁾ W. P. Yetts, *Catalogue of the Eumorfopoulos Collection of Bronzes, Sculpture etc.* London 1929—30, Vol. I.

²⁸⁾ J. G. Andersson, *The Goldsmith in Ancient China*, BMFEA, 7, 1935.

²⁹⁾ W. Ch. White, *op. cit.* No. 253.

cur on a P'an from Chin-ts'un now in the Oscar Gerson collection, Pl. VIII c. The circular basin is supported by three human figures and the petals have a spiral decoration and a bird's head with the beak forming the pointed apex.³⁰⁾

Still more baroque in style are the coronas on the large Hu vessels from Hsin-cheng, Pl. IX.³¹⁾ The square vases are adorned with dragon handles and a pair of dragons serve as feet. The bodies of the vessels are covered with a relief pattern of interlaced snake-dragons with "warts"; at the rim there is a broad flange with double whorls of 10 petals, elegantly turned outwards, (fig. 13). Each petal has an open-work design of snake dragons, fig. 14. Taken by itself, the corona presents a striking picture of an open lotus chalice, in the centre of which stands a crane, well-placed in a delightful setting on the lotus flower. The exact dating of the Hsin-cheng vases is still doubtful, but the 5th century B.C. seems to be the most adequate guess.

During the excavations in 1955 at Shou-hsien (Shou-chou), Anhui, some more bronze vessels with coronas on the lid were found.³²⁾ One tall Hu vase of approximately the same shape as the Hsin-cheng pieces has dragon handles, and four dragons serve as feet. The relief decoration represents snake dragons of a conventionalized type. On the rim there is a broad flange with six large petals turned outwards and decorated in open-work with bands of dragons, fig. 15. The outline of the petals is the same as that on the Hsin-cheng bronzes, but the décor is coarser, fig. 16. Among the Shou-hsien bronzes, however, a large Kuei on a square base is of particular interest.³³⁾ On the top of the cover we find here again five petals, forming a flower of the same kind as on the Hu, fig. 17.

The two bronzes referred to above belong to a collection of 486 vessels excavated from one and the same tomb together with weapons, chariot-mountings and ornamental bronzes. Several of the bronzes were inscribed with the name of the Marquis of Ts'ai, which may date the tomb between 493 and 447 B.C. The Kuei is of the same early type as a vessel formerly in the Eumorfopoulos collection and now in the British Museum, Pl. X a. It has been published repeatedly because of its important inscription dating it in the period 580—534 B.C.³⁴⁾ The décor still has traces of the Middle-Chou style, and so has the shape. On the top of the lid there is a corona with spreading tongues in open-work. This corona does not have the naturalistic outline of flower petals that we found on the specimens earlier described. Still closer to the Middle-Chou vessels stands another Kuei (Karlgrén, Yin and Chou, C 103), Pl. X b, with a corona on the top of the lid and "vertical scales" in several

³⁰⁾ J. D. La Plante, *Arts of the Chou dynasty*. Exhibition catalogue, Stanford University Museum, February 21 to March 28, 1958, No. 60.

³¹⁾ Sun Hai-po, *Hsin-cheng i-ch'i*.

³²⁾ W. Watson, *Archaeology in China*. London 1960, pls. 70—77.

³³⁾ W. Watson, *op. cit.* Pl. 75.

³⁴⁾ W. P. Yetts, *Catalogue of the Eumorfopoulos collection*. B. Karlgrén, Yin and Chou in *Chinese Bronzes*, pl. LIV.

rows. On the foot rim the scales are again strongly reminiscent of flower petals and the same is true of a Hu (Karlgrén C 140) datable about 567 B.C. which also has a corona on the rim, Pl. X c.³⁵)

The corona of this early type, as well as "the vertical scales" and the "wavy bands" occurring on many of the Middle Chou bronzes gives the key to the origin of the floral petals on Huai-style vessels. The artists were familiar with the practice of adorning the neck or upper part of several classes of sacrificial vessels with "rising blades". On the Yin bronzes they were embellished with cicada patterns and dragons, later on the blades were changed into "wavy bands" with inscribed abbreviated zoomorphic patterns. During the Middle-Chou era the "vertical scales" succeeded the blades to a large extent and the outline of these scales is sometimes reminiscent of flower petals of a kind which we are accustomed to find much later on porcelain, e.g. Ming blue and white décor.³⁶) In such cases it is tempting to assume a direct floral décor, but for the moment I am not inclined to go as far as that. At this point it is enough to attest the presence of such patterns in the pre-Huai bronze art as made it natural for the artists to turn them into flower petals. The examples here referred to all point to an early date for the petal-adorned corona on Hu and Kuei vessels. Probably this décor was already introduced at the beginning of the Huai-style period.

The idea of adorning a vessel with a corona or a lotus rosette on the lid is also applied to pottery replicas for the tombs. Among the vessels excavated at Lo-yang in 1953 there are very fine examples of such patterns painted on the lids of a Tou, fig. 18, and inside the bowl of a pedestalled stand, fig. 19.³⁷) Here there can be no doubt about the kind of flower represented: It is a characteristic lotus with double whorls of petals. The corona is nicely cut out in pottery on a Hu excavated at Hou Ma, Shansi, fig. 20.³⁸)

The flower petals had not invariably to be represented as a rosette or in full round as a corona on the lid. On several of the Hu and Ting vessels from Li-yü, Chin-ts'un and other sites you may find a whorl of distinct petals either in low relief or incised as well as inlaid around the neck or lower part of the belly. Umehara³⁹) has published good examples of Hu and Ting bronzes from Li-yü which are adorned with a type of petal kindred to that on the Ting in the MFEA, fig. 2, viz. more geometrical than truly botanical. They are heart-shaped, and the surface is embellished with spirals and other geometrical details, fig. 21. On several Hu vases of unknown origin published by Umehara there are likewise petals of various types, e.g. his Pls. LXXIV

³⁵) B. Karlgrén, Yin and Chou, pl. XXXV.

³⁶) See J. A. Pope, Chinese Porcelains from the Ardebil Shrine. Washington 1956, pls. 7, 12, 21, 23, 24, 25, 26, 27.

³⁷) K'ao ku hsüé pao, 1954, pp. 142 and 144.

³⁸) K'ao ku (t'ung hsün) 5, 1959, pl. 3:28.

³⁹) S. Umehara, Etude des bronzes des royaumes combattants. Kyoto 1936, pls. XVII, XVIII, XXXV, LII, LIII, LXXII, LXXIV.

and LXXVII:1. Some of the basins have a whorl of similar petals around the lower part of the belly, e.g. Pl. LIII and LVI; the same is true of a Lei in Pl. LXVII. No less than three whorls of petals appear on the Tou in Pl. LII, and many other examples could be mentioned. Fine examples of heart-shaped petals executed in gold and silver inlay occur on some bronzes from Chint's'un, e.g. a Ting and a Hu, both in the Pillsbury collection. The globular Ting, Karlgren No. 47,⁴⁰) has six open petals of heart shape around the lower part of the belly (Pl. XI a) and also on the lid the same ornaments appear as apexes on the central star ornament, together with conventionalized t'aot'ieh masks. The wine vessel which Karlgren describes under No. 48 on the Pillsbury catalogue has a whorl of large petals arranged above the foot-rim and with the points turned upwards, Pl. XI b. Karlgren has explained these patterns as being of zoomorphic origin, which is reasonable. In this case, however, it might just as well be combined with the floral patterns accounted for above. Good examples of the heart-shaped petals inlaid on a bronze vessel are further seen on the Hu reproduced by White in *Old Lo-yang*, No. 262.⁴¹) On the lower part of the belly six open petals (fig. 22) are arranged with their points downwards. How the artist could transform a floral pattern back into a zoomorphic one is seen on an octagonal Hu in the MFEA where the petals are made up of two confronted birds, fig. 23.⁴²)

As we already observed when discussing the origin of the corona petals, this motif is understandable in the light of the "rising blades" and the "hanging blades" on the archaic bronzes. The main difference between the "blades" and the petals is the outline. The "blade" is always triangular, or very nearly so since it renders the outline of a cicada, while the petals have S-curved sides giving the outline of a natural leaf or petal. When the "blade" has obtained this botanically more true shape, it may be more reasonable frankly to call it a petal, though we cannot prove what the Chinese artist actually meant by this ornament.

The quatrefoil patterns from the Huai Style period should be further documented by some more examples. A staff-end in the collection of H. M. the King has a fine pattern of a geometrical character inlaid with silver and containing the motif in question, Pl. XII a.⁴³) On the top surface there is another quatrefoil with heart-shaped petals, fig. 24. On a bronze mounting inlaid with silver in the Carl Kempe collection the same star-flowers are found, Pl. XII b.

Two of the dress hooks in H. M. the King's collection are embellished with four-petalled flowers, the one in silver inlay, fig. 25,⁴⁴) the other in turquoise,

⁴⁰) B. Karlgren, *The Catalogue of the Pillsbury Collection of Chinese Bronzes*. Minneapolis, 1952.

⁴¹) W. Ch. White, *op. cit.*

⁴²) B. Karlgren, *Some Bronzes in the Museum of Far Eastern Antiquities*, BMFEA, 21, 1940, pl. 29.

⁴³) N. Palmgren, *op. cit.*, pl. 22:2—3.

⁴⁴) N. Palmgren, *op. cit.*, pl. 28:4.

Pl. XII c. The first is said to have come from Lo-yang, and the exquisite hook, which is almost entirely covered with turquoise, might very well be of Chin-ts'un origin since a similar one is recorded by White.⁴⁵⁾ The flower pattern so formulated often recurs during the Han period, which may indicate a comparatively late Huai date for its first appearance. We shall have reason to revert to this motif in connection with the late-Huai mirrors.

There are also some floral patterns of more modest size and appearance. A few vessels from Li-yü have a very simple quatrefoil which is reminiscent of a small ranunculus flower, Pl. XIII a.⁴⁶⁾ It is merely a circle surrounded by four rounded petals, but it must undoubtedly be interpreted as a flower. The same motif is also used for the centre of a mirror of the early type, Karlgren's category A, Pl. XIII b. The back is made separately in an open-work décor composed of four snake dragons enframing a centre with geometrical border, rope pattern and, innermost, the flower itself.

The floral patterns occurring both on vessels and on small bronzes during the Huai Style period are difficult to date precisely. Thanks to Karlgren's thorough investigation of the Huai mirrors⁴⁷⁾ we are on safer ground when studying the flower patterns on these. In the first place, it is easy to state that the patterns in question are comparatively common on mirrors and can be traced from the earliest Huai down to the Han period.

The earliest Huai mirrors have been dated by Karlgren in the 6th century B.C. and placed in his category A. To this first category Karlgren refers a mirror (A 2), now belonging to His Majesty the King, which is of great interest in this connection (Pl. XIV a). Karlgren describes it as follows: "A small central field, round which runs a band with a flower of 6 petals, then a band filled with running spirals; then a broader zone filled with interlaced dragons placed alternately with the head inwards and the head outwards. The lower jaws of one dragon continues into the body of the next (fig. 12). The salient points of the bodies are emphasized by being slightly raised in comma-shaped volutes; outside this zone there is a flat rim, and in it a depression in which is inserted a band of cowries." To us the central zone is the most interesting, as we here find a beautiful design: an open lotus-flower with the characteristic outline of the petals, fig. 26. If we were to see this flower isolated, we should be inclined to date it about a thousand years later. But seeing it together with the other early Huai patterns and recalling the flower patterns already described above, it seems quite natural to find it here in this early-Huai environment. In the centre of the lotus there is a little rabbit likewise of a naturalistic shape, as knob for a cord. The rosette pattern in the central field of a mirror is, however, not very common, but it appears in a few examples of a somewhat later period. Karlgren's mirror D 7 has it together with elegant curling dragons, but here the petals are not pointed

⁴⁵⁾ W. Ch. White, op. cit., No. 134 a.

⁴⁶⁾ N. Palmgren, op. cit., pl. 17:3.

⁴⁷⁾ B. Karlgren, *Huai and Han*, BMFEA, 13, 1941.

but rounded (Pl. XXIII a) (fig. 27). It is dated in the 4th cent. B.C.; still later, from the 3rd cent. B.C., is G 1 which has a rosette of 14 petals of the same shape as D 7 but smaller (Pl. XXIV d).

A mirror in the Stoclet collection (Pl. XIV b) must also be placed in Karlgren's category A.⁴⁸⁾ Here four bird-dragons in low relief adorn the back of the mirror, their heads encircling a four-petalled flower. The type of the petals is reminiscent of those on the large flower reproduced in Pl. I. At the base of each petal is a pair of small leaves and all are hatched with thin lines.

Still another variety of a central flower is found on a square mirror in the Nelson Gallery of Art in Kansas City (Pl. XIV c). The cord knob is surrounded by four petals, which have the same outline as the last-mentioned; however, the surfaces are not hatched but are covered with scales which are made in relief bands, probably for the setting of precious stones. The principal zone of the mirror is decorated with four snake-dragons in high relief. Undoubtedly this mirror should be attributed to category A.

Already on the early Huai mirrors we found another variety of the four-petalled flower which in this case is more strongly stylized. One mirror shows in the centre a cross radiating from the central knob, each arm ending in a heart-shaped petal (Pl. XIV d).⁴⁹⁾ The petal has a circular receptacle for a precious stone. Such receptacles also exist in a few places on the surrounding open-work which shows a design of conventionalized band-dragons. The type of ornamentation on this mirror indicates category A., viz. of the 6th cent. B.C., and shows that naturalistic and geometrical floral patterns could be used in the same epoch. In a way, this quatrefoil is related to the flower on the cover of the Ting reproduced in fig. 2 (MFEA).

The next group that gives an example of floral patterns is Karlgren's category B. It occurs on a mirror excavated near Ch'ang-sha and published in Ch'u wen wu chan lan t'u lu 1954, pl. 35, our Pl. XIV e. It is in the same category as four other mirrors discussed by Karlgren in BMFEA No. 33, p. 98 ff. The Ch'ang-sha mirror has four petals around the square middle frame. This kind of leaf-shaped petals will be commented upon later on, and it is mentioned here only in order to assign an early date to their first appearance, viz. 6th or 5th cent. B.C.

The best instances of floral patterns are to be found in Karlgren's category C, where they are apparently very popular. Most closely related to the flower petals studied above are those appearing on the mirrors C 19 and C 20 (our Pl. XV a, b). Four large petals on the mirror C 19, in His Majesty's collection (Pl. XV a), radiate from a square middle frame. Each petal has a pair of smaller base leaflets and is hatched with slanting parallel lines representing the veins. The outline consists of a double band. Although the petals have a naturalistic design their position around a square central frame counteracts the impression of a true floral representation. The same is true of the slightly

⁴⁸⁾ H. F. E. Visser, *Asiatic Art*. Amsterdam 1947, pl. 49, No. 79.

⁴⁹⁾ S. Umehara, *L'Etude sur le miroir antérieur à la dynastie des Han*, pl. XXXIX:1.

smaller petals of a similar type on the mirror Pl. XV b. Here the surface is likewise hatched with slanting lines, but the pair of leaflets have united with the large petal into one whole, with a common vein system. Both these mirrors have the principal field covered with the comma pattern that is so characteristic of the Huai mirrors of this category, which Karlgren dates in the 4th cent. B.C.

In the same century Karlgren dates the mirror C 44 (Pl. XV c) which has "slanting T's" as principal pattern and six petals protruding from the circular central band. The petals are decorated with slanting strokes and a double bow marks the leaflets at the base, as on the mirror in Pl. XV a. Because of their arrangement these petals give a stronger impression of a real flower; on the same mirror six more petals emanate from the outer zone.

The petals could sometimes be further elaborated in their design, as may be seen on the mirrors C 22 and C 23. The mirror belonging to the MFEA has four large petals which have a heart-shaped outline, with spirals at the base. (Pl. XV d). The outline is achieved by a thin relief band, and within it there is a zone with (false) granulation. Against this background there is an inner leaf with a double-lined hatched margin from which two small flaps protrude. The surface of the petal is likewise hatched with slanting strokes. Beside its base spirals there is a pair of small leaves with vertical hatching. Although this petal is more conventionalized than those described above, the naturalistic details on the inscribed leaves are still there.

A further step towards abstraction is taken on the mirror C 23 (Pl. XV e) in which the petals have a heart-shaped outline and are projected on a thick stalk attached to the circular inner zone. A trifoil is inscribed above the base spirals. This pattern with a trifoil is surprising on a bronze of such an early date, the 4th cent. B.C., since we usually find it in a period about a thousand years later. A palmette pattern of this kind would indeed be hard to explain without some knowledge of the floral patterns which we have tried to account for above.

A similar mirror has recently been found at Ch'ang-sha and was published in K'ao ku, 4, 1957, pl. 5. Petals of this type are derivatives from those found on the mirror reproduced in Pl. XIII d and referred by Karlgren to category A.

The mirrors adduced, which belong to category C, have been dated by Karlgren in the 4th cent. B.C. and except for C 22 they have been attested as hailing from the Shou-chou region, i.e. the Ch'u state. Of the same origin and from the 4th and 3rd cent. B.C. is another group of mirrors, C 16, C 17, C 18, C 21, C 25, C 26, C 27, all of which show a different kind of floral pattern. Here the quatrefoil outside the round or square inner zone has simpler petals than in the former group — more reminiscent of an elm leaf than a real petal (Pl. XVI a—d). They are heart-shaped with tip and base in a somewhat higher relief than the middle section. On each leaf there is a ridge dividing it into two halves. Sometimes the leaves are directly attached to the central zone of the mirror, sometimes they are free from it, especially

when they are bordered in by a hatched or bare "shadow", as on the mirrors C 17 and C 21. On C 25 (Pl. XVI d) the leaves are attached to the central zone by hatched stalks, on C 26 and C 27 one stalk links together two leaves, the one on top of the other; they radiate from the centre of the mirror like the spokes of a wheel.

Sometimes, moreover, the leaves could be applied as free star-flowers, arranged in the principal field around the knob-flower, for instance on mirrors C 30 and C 31. Here four quatrefoils are elegantly placed against the comma-patterned background, almost giving the impression of water flowers floating on the stream (Pl. XVI e). The centre of these flowers is formed as a receptacle for a precious stone; probably it has held a turquoise. On C 31 the petals are elegantly pointed and have a marked central rib (Pl. XVII a). The quatrefoils are sometimes combined with a more complicated pattern of zig-zag lozenges (Pl. XVII b) as on the mirrors C 80 and C 81. On C 85 the same kind of quatrefoils are combined with a pattern of bands forming squares (Pl. XVII c). These mirrors were dated by Karlgren in the 3rd cent. B.C. viz. at the end of the Huai epoch; like the earlier ones, they too come from the Shou-chou region.

Fine examples of the C category in which flower petals are used together with "slanting T's" are seen in Pl. XVII d, e (C 39, C 40, C 41, C 42, C 43). The petals emanate from the central field, in sets of four or five, and on C 42 and C 43 (Pl. XVIII a) the petals have, instead of a central rib, a circular raised border, which has probably enclosed a turquoise. A rarer type of petals is found on a mirror of this category in the Nelson Gallery of Art, Kansas City (Pl. XVIII b). Here there are only three large petals with long points attached to the central field, the whole picture reminiscent of a trillium flower.

Among the mirrors with "slanting T's" we find the most elaborate pattern of quatrefoils. On C 45 and C 46 (Pl. XVIII c) double petals with stalks stand out from the corners of the central square and C 48 (Pl. XVIII d) shows how five of these "wheel-spoke petals" are grouped around the circular knob field in a composition forming a large rosette with a band-like outline. It is not easy to figure out the pattern, since it is partly hidden behind the T's, but the drawing in fig. 28 will give a good idea of this design. On C 50 and 54 the quatrefoils (Pl. XVIII e) have occupied the principal field, petals being attached to the central square (Pl. XIX a), but on C 51 and C 53, Pl. XIX b, c single petals are used in the same place and connected to the large "band-rosette". On a more unusual mirror in His Majesty's collection this complicated pattern has been simplified into a true floral décor, Pl. XXIV e. These mirrors with "slanting T's" were dated by Karlgren in the 3rd cent. B.C. and all of them hail from the Shou-chou region.

As we have now demonstrated, the quatrefoil flower could be used in many varieties, sometimes arranged in a more naturalistic way, sometimes with the petals separated and applied in a geometrical composition of a more abstract character. A square mirror, C 84, shows one of the more unusual floral patterns;

in this case it is placed in the corners. The petal has here been placed on a stalk together with a pair of crescent-shaped leaves, the whole giving an elegant picture of something reminiscent of a tulip, fig. 29.

In the category D, which Karlgren dates in the 3rd cent. B.C., we further find some mirrors with a quatrefoil pattern, e.g. D 44, 45, 46 (our Pls. XIX d, e, XX a). No. 45 has four flowers arranged in the principal zone quite free from the central zone and separated by lancet-shaped leaves with granular lines (Pl. XIX e). The petals are here heart-shaped, with an accentuated outline. The same is characteristic of D 46 (H. M. the King's collection) in which the quatrefoils are also on the central zone but connected with each other by a circular string (Pl. XX a). The centre of the flowers is cross-marked. To the same category Karlgren also refers some small mirrors with the stalked petals radiating like the spokes of a wheel, D 43, D 47, D 48 (Pl. XX b, d, e). The mirrors D 43 and D 44 both illustrate a new version of the single petal; it is here combined with S-shaped petals, the whole achieving a fine design of a lily-like ornament, fig. 30.

At the end of the Huai-style period the mirror artists had obviously forgotten the meaning of the four-petalled flower and use the petals quite freely in various connections. On the mirrors of type C 77 and C 78, for instance, the petal has been used as the tail-feather of the distorted bird, Pl. XX c, and it has entirely lost its floral character.

During the 3rd cent. a central flower of a quite new character appears on some mirrors belonging to Karlgren's category D. In Nos. D 19, D 21, D 26, D 29, D 50—53, large bulbous, heart-shaped petals surround the central field, sometimes (Pl. XX e) growing out from a common centre and with indentations between them as in real flowers (Nos. 26 and 50). This quatrefoil is closely akin to an ornament occurring on two dress-hooks in H. M. the King's collection (fig. 25). More frequently the petals are spread out, being widely separated around a circular band, as on D 19, D 23, D 51, D 52, D 53, (Pl. XXI a, b). Here the petals are plain, with double outline, but in a few cases they are adorned with geometrical incisions such as spirals, circles and triangles for instance in Pl. XXI c reproducing a mirror in H. M. the Kings' collection (No. 19 in Karlgren's category G). Somewhat akin to the geometrical heart-shaped petal are four petals on the mirror D 35, Pl. XXIII c, placed at the corners of the central square and with a bird standing on the tip.

In a sequel to this paper we shall follow the history of this large quatrefoil during the Han dynasty and observe how it changed into more elaborate versions.

Besides the quatrefoil or four-petalled flower described above there appear some other varieties on the Huai mirrors which should also be mentioned here. On the mirrors D 45 and D 47 (Pl. XIX e XX b) we have already noticed lancet-shaped petals alternating with the heart-shaped ones. These long petals and leaves are also found in other connections, as on D 39 and D 40, where they are attached to a star ornament around the knob and combined with

birds (Pl. XXI d). In D 41 and D 42 the petals are placed at the corners of the central square and have a granular line as an additional décor. The mirror C 68 is probably somewhat earlier; it has the same petals but they are shadowed by "fans" like the saw-teeth of a leaf (Pl. XXI e).

Before we leave the Huai mirrors, a few more details in the patterns must be accounted for, since they are of interest in this connection. The mirror C 24 has four petals around the knob-field which Karlgren describes as resembling a "Mongol cap with ear-flaps", Pl. XXII a and fig. 31. It is not easy to interpret the meaning of this pattern but it is reasonable to connect it with floral motifs, since the petal functions as its base. This pattern could also be doubled with a combining stalk, as on the mirror C 47, Pl. XXII b.

A few mirrors from the 3rd cent. B.C., i.e. the end of the Huai period, have in their décor a detail which might best be described as a lily pattern. Karlgren's D 41 is embellished with four long petals from the corners of the central square, and between them four "lilies" are placed at the outer border with their points inwards, Pl. XXII c. The lily consists of a tall petal adorned in the middle with a trifoil at the point and it is framed-in by two S-shaped leaves which meet in a circle at the base (fig. 32). It is surprising to find this lily as early as in the Huai style, but it should be interpreted as a flower ornament, since we cannot find any other plausible origin. The same theme, combining petals and leaves in a complicated ornament of lily-type, is also seen on the mirror D 37, Pl. XXII d (fig. 33). Here the artist starts from a star-ornament around the cord knob and four of its points grow out into a heart-shaped petal. This latter is enclosed by another heart-shaped petal, and this one again has two small flaps and is borne on a long stalk; this stalk terminates in a cone-shaped petal or fruit attached to a pair of out-turned leaves. The origin of this elegant flower pattern may perhaps be found in the small "lilies" on D 42, D 43 and D 44, where a petal of the common type has been enframed within a pair of S-curved leaves.

Again the mirror C 58 has an interesting pattern composed of 4 petals around the central field. From the petals stalks radiate with a trident-like ornament, Pl. XXII e. This mirror is dated in the 4th cent. B.C. by Karlgren. Karlgren has made a special study of what he calls "the petals with a long stalk" in the categories E and F. In fig. 19 of "Huai and Han" he explains the development. To follow up our enumeration of the flower ornaments used on Huai style mirrors we finally mention this pattern. In His Majesty's collection there is a mirror, Pl. XXIII e, (Karlgren E 1), adorned with four petals of a more unusual type. They are reminiscent of an egg-shaped leaf with veins and stalk in a naturalistic rendering. On the contrary, the petals in mirrors like E 1, E 5, E 8, our Pls. XXIII d, XXIV a, b, are more conventionalized. The heart-shaped petals in E 1 have only a short stalk and is adorned with a geometrical design on the surface. In the mirror E 5 the stalk is longer and the petal "bud-like", as Karlgren calls it, and made of two halves with a vertical incision. A more elaborated variety of this petal may be observed in the mirror

E 8, where it has been given "hook-like embellishments" applied to the dragons. This type of ornament could be varied, as seen on Karlgren's E 4, E 6, E 7 and later on during Han, when he calls them "brush-like petals". In the category E the elongated petal likewise occurs, as in E 10, Pl. XXIV c, in this case with a circle inscribed.

To judge from this short investigation of the floral patterns used on the Huai-style bronzes it is obvious that during this era the Chinese made a really new departure in some of their art motifs. We have found the lotus rosette, the five-petalled flower and the quatrefoil used to fulfil various functions on bronze vessels and all kinds of small bronzes. Most frequently they were used on the mirrors, from the earliest times down to Han. Two principal types of the pattern could easily be distinguished: the one more naturalistic, the other conventionalized into a geometrical version. They appear together throughout the period and it is hard to connect these types with any special locality or region. We know that most of the mirrors with quatrefoils and petals of naturalistic varieties hail from the Shou-chou region and Ch'ang-sha, evidently produced in the Ch'u state. The two bronze covers (most probably lids for incense burners) with the five- and four-petalled star-flowers could very well have come from the south, in view of the tiger's head and the freely interlacing dragons in elegant design. At present, however, it is impossible to prove anything definite about the origin of these interesting small bronzes. The circular plaques on Pl. III have a counterpart found at Huei-hsien, i.e. in Honan, and the snake dragons on the plaque belonging to the MFEA have features similar to those on the lid in Pl. III. The bronze specimen in Pl. I in H. M. the King's collection has the most naturalistic flower of all those described here, but we do not know where it was made. The massiveness of the design in a real baroque style is most closely related to that on the bronzes found at Li-yü and Huei-hsien, e.g. the Chien in the Pillsbury collection (Karlgren No. 51). The other flower-rosettes described above from Ting vessels were likewise of a Northern origin and most of the large Hu vases with flower coronas at the rim come from the North (Chin-ts'un, Hsin-cheng, Ch'i-hsien), only a few from Shou-chou. Painted lotus flowers were found on the lids of pottery Hu and Ting vessels from Lo-yang. The fine instances of lotus flowers in full round used on the mounting for Ko handles are from Chin-ts'un, but very few examples of floral patterns have so far been found on bronzes from Shou-chou and Ch'ang-sha.

It would be tempting to give the Ch'u-state artists the credit for introducing floral patterns in the Huai-style art, but for the moment that is impossible for lack of definite evidence. The Yangtsi region has for ages been a fertile ground for new artistic ideas and in that part of the country landscape painting underwent its most important development. Michael Sullivan⁵⁰) has al-

⁵⁰) M. Sullivan, Pictorial art and the attitude toward nature in ancient China. The Art Bulletin, March 1954.

ready given some aspects of the rôle which the Ch'u state played in the earliest representation of landscape in China, and as examples he has collected some characteristic patterns from mirrors and other objects. He has referred, *inter alia*, to some of the petals which we have accounted for, but he has characterized them as trees. When he deals with the "petals" of a complicated type such as fig. 34, from mirrors of the 3rd cent. B.C., he is undoubtedly justified in calling them trees and not petals, but if we follow the evolution of the flower pattern from its first appearance in the early Huai-style period, in a naturalistic rendering such as in Pl. I, the development seems to be clear. From being the separated petals of a flower they were transformed into a leaf on a stalk, which might then serve as a symbol for a tree.

Although it is difficult as yet to date the patterns accounted for in this paper with any precision, many facts point to a development from a more naturalistic representation towards conventionalizing in a geometrical form. The lotus in Pl. I is one of the finest pictures of the flower found so far dating from the Huai-style period, and it appears to date from the beginning of this epoch. The star-flowers on the bronze in Pl. III are likewise comparatively early, and so are the most naturalistic petals on the Hu vessel coronas. The same may be observed in regard to the mirrors. The most convincing flower petals are found on the earliest mirrors of categories A and C. Although we find the best examples of real flowers during the early Huai Style period, a few conventionalized types are also found to have existed contemporaneously. On the other hand, there is a clear tendency towards simplification and remodelling of the patterns during Late Huai. As so often in Chinese art, a new pattern of foreign character successively undergoes a transition into a genuine Chinese rendering. The Huai Style period witnessed an important renaissance in the bronze art, with the introduction of naturalistic patterns from foreign countries or provinces far away from Central China. At the end of the period all these new details had been fused into the abstract scheme of geometrical patterns so characteristic of ancient Chinese art. During the Han period a new infusion of flower patterns appears which will be accounted for in a following paper.



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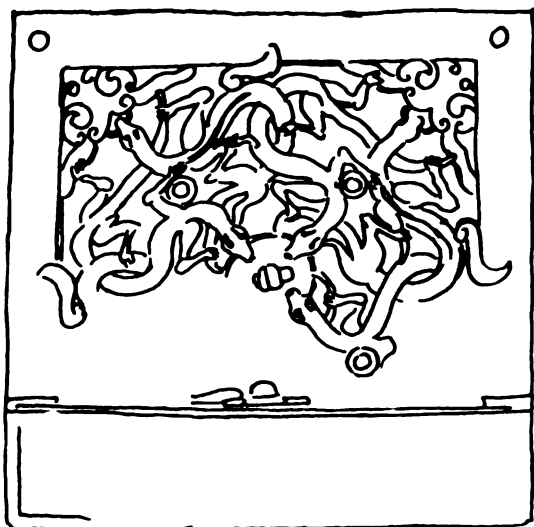
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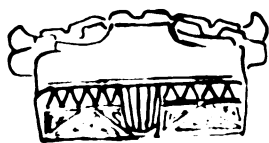
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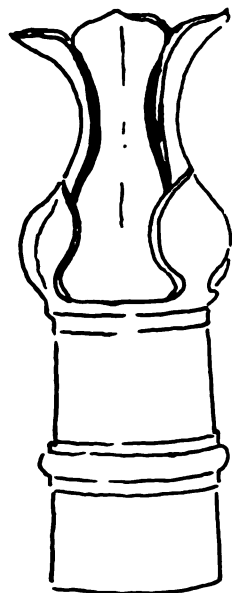
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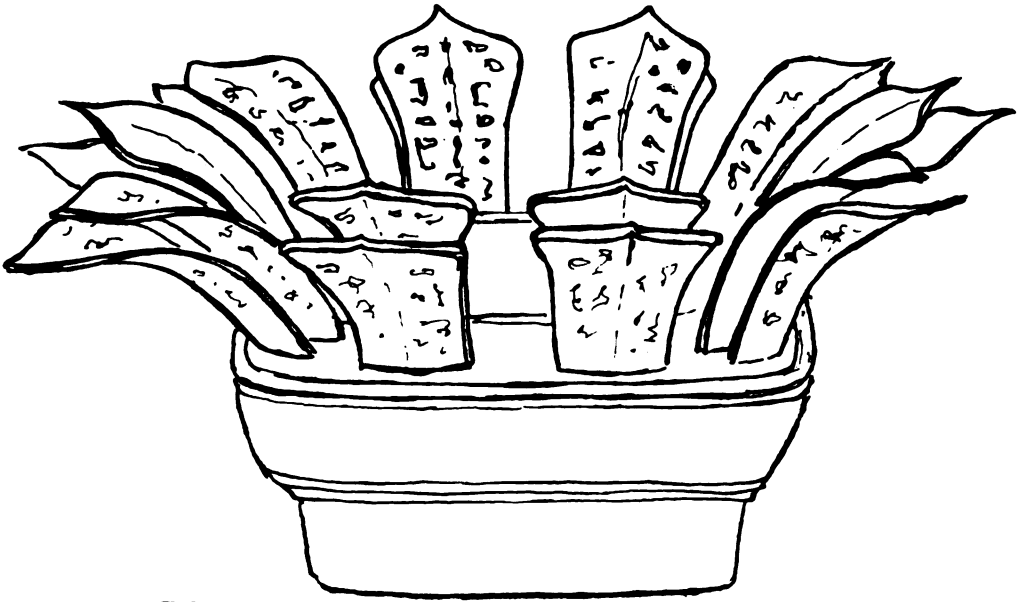
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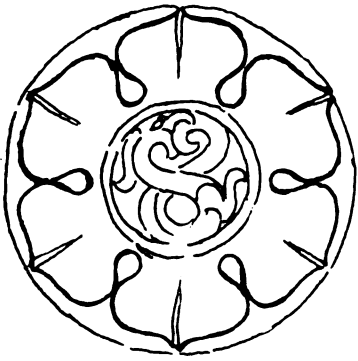
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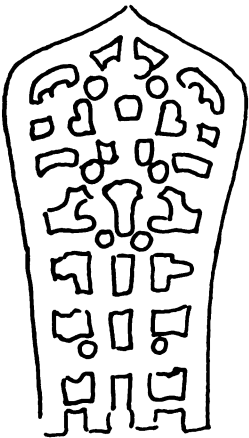
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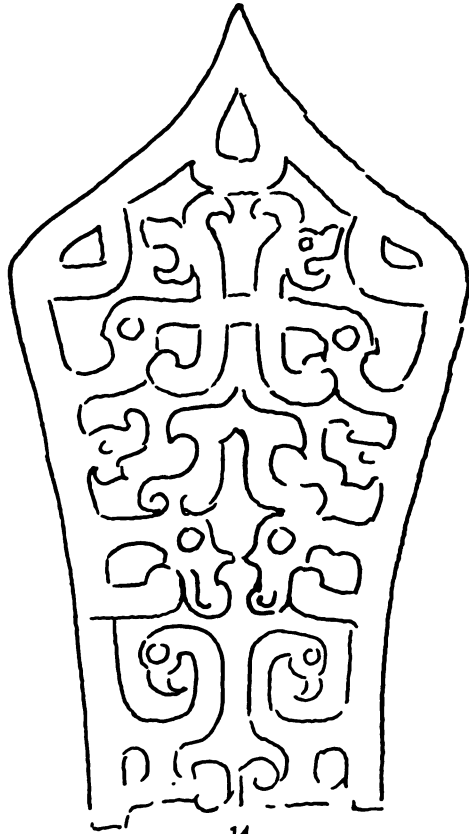
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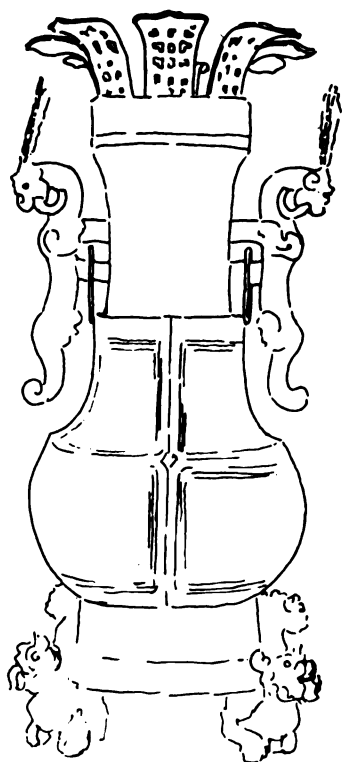
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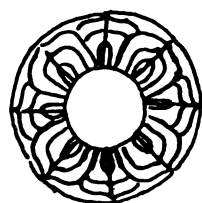
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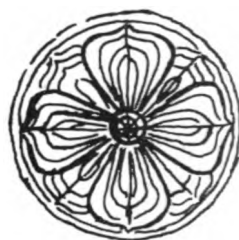
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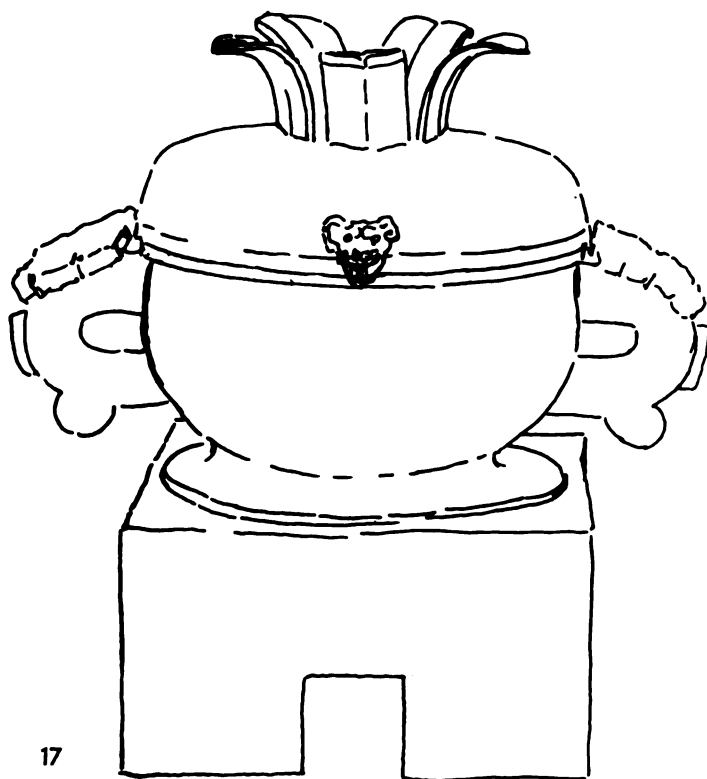
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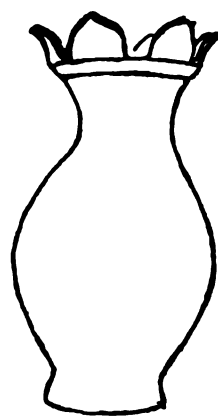
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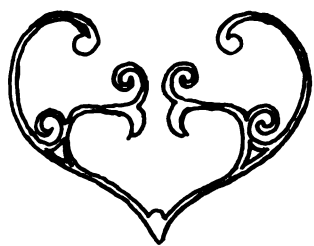
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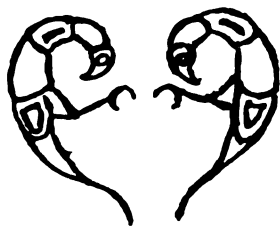
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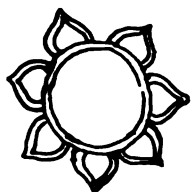
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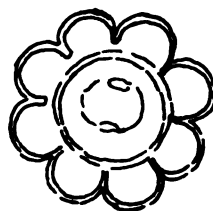
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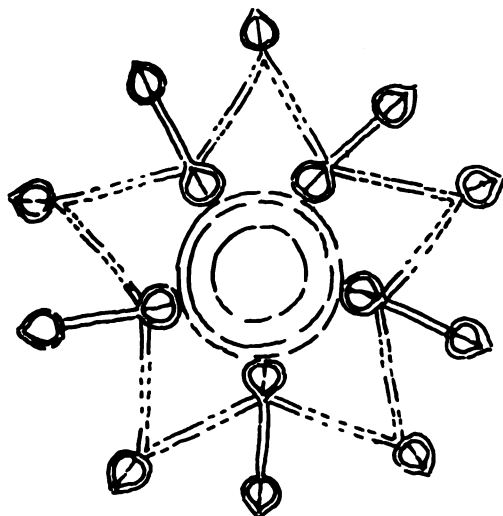
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32



33



E.5



E.6



E.3



34



a



c



b



a



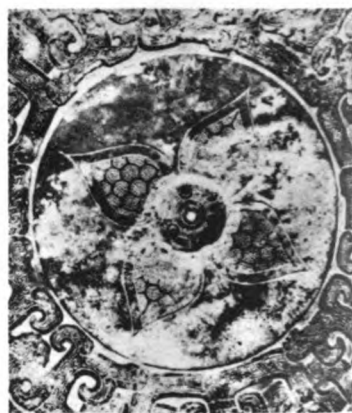
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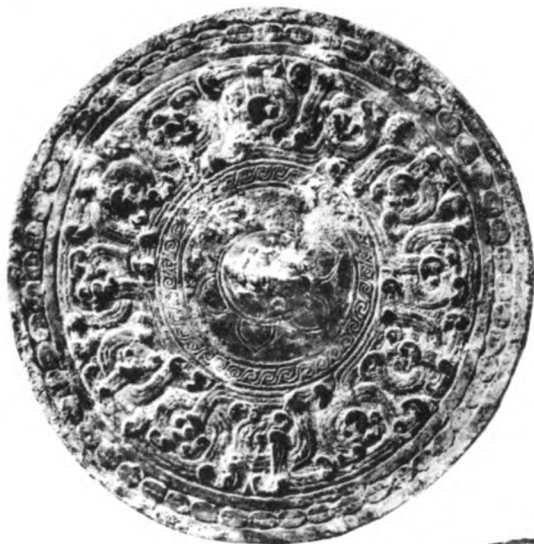




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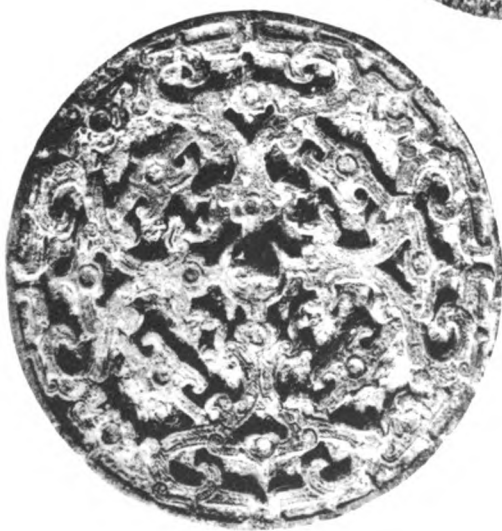
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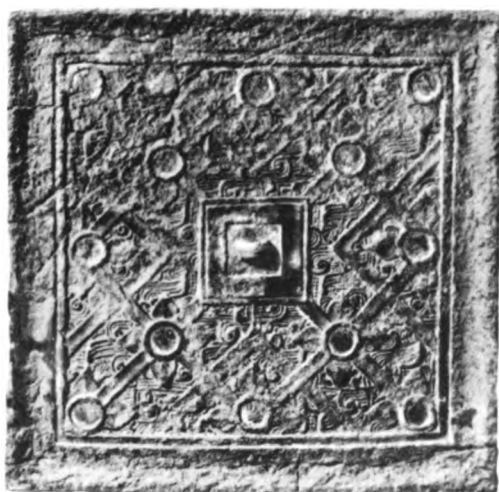
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SOME CERAMIC WARES FROM CHI-CHOU

BY

JAN WIRGIN

The province of Kiangsi has for a very long time past been one of the main centres of pottery and porcelain production in China. The principal reason for this is that Kiangsi has rich sources of suitable clays, and all the various ingredients used for the glaze are also found here. Before the great concentration of the porcelain manufacture within Ching-te chen in the 14th century a great many kilns of different sizes were operating in Kiangsi, some of them quite small, mainly making wares for local use, but some with a considerable output. One of the main kilns in Kiangsi during the Sung dynasty was Chi-chou 吉州 (Fig. 1).

The kiln site of Chi-chou has been known for a long time and it was visited already in 1937 by Brankston.¹⁾ But it is only recently that a scientific investigation has been made and an excavation of the kiln site has taken place.²⁾ The result of this excavation work was published in China in 1958, and the present article is to a great extent based on information given in that publication.³⁾

The ruins of the Chi-chou kiln are situated at Yung-ho 永和 about 8 km from the city of Chi-an 吉安 in Kiangsi. The old name for Chi-an used during the Five Dynasties and Sung was Chi-chou. Yung-ho was originally a small town in the Chi-an prefecture situated on the Kan River 贛江. To-day it is only a small village of about 300 families, but during the Sung dynasty it was quite prosperous and several thousand families lived in that region. The Ching-te chen t'ao lu states that at the time of the Sung dynasty five kilns were operating at Yung-ho:⁴⁾

¹⁾ Brankston, A. D., *An Excursion to Ching-te-chen and Chi-an-fu in Kiangsi*. T. O. C. S. Vol. 16, 1938—39. Among the wasters and sherds collected by Brankston from the kiln site at Yung-ho were white porcellaneous wares with colourless glaze, hard white wares with buff-tinted body and decoration painted in golden brown, and several different types of buff-white stoneware with hare's fur glaze and other temmoku types. Brankston dated the fragments from the 10th century to the 14th century.

²⁾ Several minor excavations at the kiln site have no doubt been carried out, starting already in early Ming time. A description of an excavation here is given in the Ming dynasty work *Ko ku yao lun* 格古要論.

³⁾ *Chi-chou yao* 吉州窯, by Ch'iang Hsüan-t'ai. Peking 1958 (hereafter referred to as CCY). A first preliminary report of the excavations carried out by the Kiangsi Cultural Administrative Committee was published in *Wen Wu Ts'an K'ao Tzu Liao* no. 9, 1953 under the title *Chi-chou yao i chih kai kuang*.

⁴⁾ *T'ao-lu*, translated by G. R. Sayer. London 1951. p. 63.

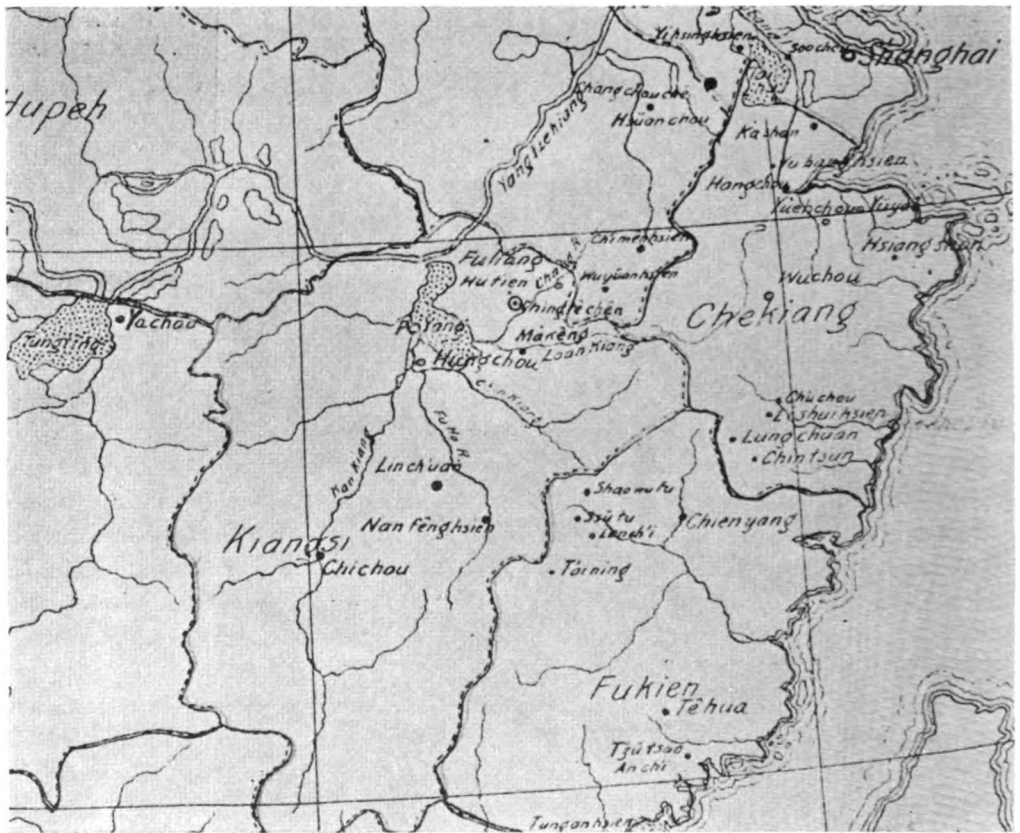


Fig. 1. Map of pottery and porcelain factories in Kiangsi, Chekiang and Fukien.

“Chi-chou ware.

The ware in Sung days of Yung-ho market in Chi-chou — to-day’s Lu-ling district of Chi-an.

In the past it had five kilns, all the wares being white or purple in colour. The purple included pieces of the same type as ‘purple Ting’.

Of the five kilns only the pieces made by the Shu family were much good. Old Mr. Shu was an expert at making curios.¹⁾ The old man’s daughter Shu Chiao was an even better potter. Her jars (lu) and water pots (weng) of every kind fetched nearly the same price as Ko ware. Her large flower vases were worth several ounces of gold. The small ones were decorated.²⁾

¹⁾ The Chinese characters wan chü 玩具 which are translated by Sayer “curios” really have the sense of “small decorative objects”. They certainly refer to toys in this case. At the excavation of the Yung-ho kiln site several small ceramic toys were found. Cf. CCY pls. 52—53.

²⁾ The Chinese text has the character hua 花 for “decorated”; this means either merely “decorated” or “flower decorated”. In this case it is most probable that the meaning is “flower decorated”; otherwise the sense would be that the large vases were not decorated.

The *Ko Ku Yao Lun* says: 'The body is thick; the material coarse. They are hardly worth noticing'.

Mr. T'ang in his *Szu K'ao* says: 'Chi ware is rather like Ting. It comes from the present day Yung-ho-chen of Chi-an. It is said that vessels made by the potters and placed in the kiln at a time when Wen (Wen T'ien-hsiang, A. D. 1236—82) Premier of Sung was passing, all turned into jade. The workers in terror lest the facts should get to the ears of those above them sealed the opening and refused to bake, and ran off to Jao. Consequently in the early days of Ching-te-chen many of the potters were Yung-ho men'.

It appears that this must be referring to early Yüan days. After the Mings began making pottery all the potters were natives of Ch'ang-nan."

The main ruins of the Chi-chou kiln are at the west side of Yung-ho and they cover a very large area. The recent research work carried out here shows that this kiln once was one of the largest in China. An innumerable amount of wasters and sherds as well as seggars and other kiln instruments are still preserved here. Up to present more than 10 000 vessels have been excavated from this site. Over 20 different ruins have been discovered, but it is not possible to say how many of them were real kiln sites.¹⁾ The ruins consist mostly of big heaps of sherds, wasters and kiln instruments, some of them as much as 20 metres high. It is possible that many of these heaps do not contain an actual kiln but that they have been built up by farmers who wanted to enlarge their cultivated fields and accordingly collected sherds and seggars from the ground and piled them up. Some of the ruins, however, contain such a large amount of seggars, burning-supports and iron tools that we can assume that those were kiln sites. Before a general excavation of all these ruins has been carried out it is not possible to judge how many kilns were operating here. From the large material of sherds and vessels found here, however, it is quite obvious that the production of Chi-chou must have been very large and that the kiln must have been active during a long period. The circulation of the Chi-chou wares also seems to have been very widespread. In the neighbourhood of Chi-an sherds of Chi-chou wares can be seen everywhere, and they have also been found in Hangchou, Ku Tang 古蕩, Nan Shan 南山 and Han T'ang 旱塘; in the region of Chang Shu 樟樹 Chi-chou porcelains have been found in tombs.

The Chi-chou kiln principally produced wares for daily use such as tea-bowls, flower vases etc., often of quite a rough quality and intended for the common people. But some wares of finer quality such as the white porcelain were also manufactured here. Chi-chou was not an official kiln (Kuan yao 官窯) but a private kiln. From the 10th century, however, throughout the whole Sung dynasty there was an official bureau in Chi-chou whose mission was to supervise the production and sales and to collect the taxes. Accordingly, Chi-chou was more or less a semi-official kiln (Pan Kuan yao 半官窯).

Among the sherds excavated in Yung-ho there were several different kinds, e. g. celadon, white porcelain of Ting type, temmoku wares, black-glazed wares, ceramics

¹⁾ A detailed description of the various ruins and what kind of sherds, tools etc. they contained is given in the CCY p. 3—8.

with painted designs etc. Most of the sherds were from Sung and Yüan times, but there were some celadons of earlier types, probably of T'ang date, and also some early Ming sherds. No sherds of later date than the beginning of the Ming dynasty were discovered. Many of the ruins had, of course, been excavated and plundered earlier, at least on the surface, and most of the sherds with designs have been taken away, as well as all the more or less intact vessels. The majority of Chi-chou ceramics, especially temmoku bowls, which are now scattered in different collections all over the world, were no doubt taken from this kiln site. This is the reason why those left behind are almost invariably damaged and repaired.

In this short article we do not propose to make a general investigation of all the different wares manufactured at the Chi-chou kiln. We shall only take the well-known temmoku group for our study, and in connection with that group draw a comparison with a special group of white ware from Chi-chou which hitherto has not been seriously studied.

THE CHI-CHOU TEMMOKU WARES

Already before Brankston's find of the kiln site in Yung-ho the temmoku wares of Chi-chou had been located in Kiangsi and were known as Kian-temmoku. However, since we now know the actual kiln, it seems more adequate in the future to call this ware Chi-chou ware.

Among the ruins in Yung-ho there are large quantities of temmoku sherds, showing that this was one of the main products of the kiln during a long period of production and with a very large output. Temmoku sherds were found both in the northern and in the southern part of the excavated area.

The temmoku wares were intended for daily use, and the vessels produced consist to a very large extent of tea-bowls. The Chi-chou temmoku is made of a buff or buff-grey stoneware with a glossy hare's fur glaze varying in colour from dark brown to golden yellow; sometimes the glaze is a rather lustreless black. The Chi-chou temmoku differs widely from the Chien temmoku. Mostly the vessels are not very elegant, and sometimes they are rather crude. The glaze is thinner than the Chien glaze and it also flows down to the very edge of the base. It does not have the thick drops of glaze on the outside so common in Chien wares. The base is mostly shallow. There are several different types of Chi-chou temmoku, and we shall briefly describe here the main types, classified according to the technique of their decoration.

1. *Leaf design*

A type of temmoku which is a speciality for Chi-chou is the one that has a leaf as design (pl. 1). This leaf stands out in a yellowish colour against the black-glazed background. The majority of specimens with this decoration are tea-bowls. The leaf design was earlier believed to have been painted or stencilled on the vessels, but to obtain this effect natural leaves were used.

The technique adopted seems to have been as follows. On the body of the vessel (usually the interior of a bowl) a small area was painted in yellowish colour. The leaf was placed; on this area afterwards the remaining parts of the vessel were covered with black glaze. After the burning the bowl appears brownish-black with a yellowish leaf design due to the leaf's having made an impression on the yellow coating before being consumed by the fire. The technique is very ingenious and it is obviously the result of a long period of experimenting. It has even been suggested that only a special kind of leaf can be used for this purpose.¹⁾ This method of decoration is not known to have been used at any other place than Chi-chou, and it seems to be limited in time to Sung and, probably, Yüan. According to CCY fresh leaves were not used for this procedure, but the leaf was first soaked for some time in water in order to make it rot, so that only the vein-system was left. This explanation, however, does not seem to be fully proved; on the contrary, a close examination of a specimen with this kind of design gives the impression that actually an entire leaf was used.²⁾

We have already stated that the great majority of specimens with this leaf decoration are small bowls, but pillows with the same design are known. The bowls are mostly of a conical shape; the decoration often consists of only one leaf, but examples with two or even three leaves are found; sometimes only half a leaf was used, placed on the very rim of the bowl.³⁾ The bowls with one leaf, the most common type, usually have the leaf placed in the centre of the bowl or with the point in or close to the centre. The outside of the bowl is never decorated, but it is glazed in brownish-black and often splashed with dabs of brownish-yellow. The production of this kind of Chi-chou ware must have been very large and specimens are found in many collections⁴⁾.

2. *Paper-cuts decoration.*

The most typical and perhaps also the best-known of the temmoku wares from Chi-chou are those with designs of the type seen in our pls. 2—4. This kind of design generally stands out in dark brown against a background of a streaked and mottled hare's-fur glaze in different shades of purple, blue, brown, black, dark green and yellow. The design was formerly considered to have been painted on the glaze, but lately the theory has been advanced that they were made with the aid of paper-cuts. The technique used must have been somewhat similar to the procedure followed in the case of the above-mentioned leaf-decorated specimens.

¹⁾ In the CCY it is suggested that the leaves used were the leaves of the che 柘 tree (*Cudrania triloba*).

²⁾ The actual technique is not fully known, and opinions vary widely among different writers on this subject. Some think that the leaf was removed already before the burning and accordingly only used as a kind of stamp. However, the leaf very often stands out in relief, which could hardly be the case if it had been removed before firing.

³⁾ Cf. CCY pl. 2.

⁴⁾ Cf. The Charles B. Hoyt Collection. Museum of Fine Arts. Boston 1952. Nos. 329, 330. Sekai Toji Zenshu. Vol. 10. Tokyo 1955. Pl. 62 and fig. 52. Koyama, Fuji, *Keramik des Ostens*. 1959. Pl. 34. Hobson, R. L. *Catalogue of the Eumorfopoulos Coll.* Vol. II. B. 267.

Characteristic of many of the vessels in this group is the fact that they have one design repeated several times (pls. 2 a and 3 b) and it seems logical to assume that this was done by some kind of reproduction method. It is therefore reasonable to suppose that the paper-cutting technique was employed, and it is indeed quite obvious that many of the motifs used on this kind of ware are still very common in modern paper-cuts. We know that paper-cuts were very popular as a folk-art during the Sung dynasty and that already then they had had a long history in China.¹⁾

The designs on Chi-chou yao temmoku made with the aid of paper-cuts are mainly of two different types. The first type is made by means of paper-cuts produced in the usual way either with a folded paper, which is cut and then unfolded and accordingly gives an ornament with two identical sides, or with a bundle of paper sheets which are cut simultaneously, resulting in a large number of almost identical designs. Examples of this first type are seen in our plates 2 a, 3, 4 b.

The second type of paper-cuts is more complicated and yields a design that is freer and more lively. The procedure is as follows. Animal fat and wax are mixed and boiled so as to form a kind of glue-like substance; this is put in a shallow wooden box. When it is cold and has congealed, the paper, which is relatively thick, is placed on the surface and the decoration is cut out with a sharp knife. The result of this method, which can be seen in our plates 2 b, 4 a, is much more forceful than the other paper-cutting designs; it comes quite close to painting, and it is also more individual and elegant.

The motifs used on the temmoku with paper-cutting decoration are very limited, and the arrangement of the designs is also very strict. Among the most common types of design are panels with lucky phrases such as *Ch'ang ming fu kuei* Long life, wealth and honour, *Fu shou k'ang ning* Wealth, longevity, health and peace and *Chin yü man t'ang* (May) gold and jade fill (your) hall; and phoenixes, mandarin ducks, butterflies, flower-rosettes, prunus, bamboo and orchids.²⁾ All the decoration is on the inside of the bowls, the exterior is undecorated. The flower sprays, rosettes, bamboos and the panels with lucky phrases are usually arranged in three groups on the sides of the bowl. The prunus flowers also occur scattered over the whole interior of the bowl (pl. 4 b). The birds usually occur in pairs or singly together with a flower branch (pl. 3 a).

The interior of the bowls in this group is glazed in a yellowish glaze which owing to the transmutation in the fire (yao pien 窯變) turns into hare's-fur glaze of various types and colours. The dark-brown decoration does not change its colour, but after firing it acquires a softer and more fluent contour, which is quite closely akin to ink-painting. The exterior of the bowls is usually glazed with dark-brown glaze, which was afterwards sprinkled with drops of yellow glaze. After burning the result is the so-called tortoise-shell glaze. Sometimes the exterior is only glazed in a plain dark-brown colour.

¹⁾ See CCY pp. 31—34.

²⁾ Cf. Hoyt catalogue nos. 327, 328. Sekai Toji Zenshu, Vol. 10 pls. 18, 63 and figs. 50, 51, 54. Eumorfopoulos cat. Vol. II, B 294, 237, 238.

3. *Painted decoration*

This group of Chi-chou temmoku is characterized by the designs' being made with a brush. There are two main types: one has the transmuted glaze and one has plain black glaze. An example of the first type is seen in pl. 5 d. This vase has a painted decoration of spiky scrollwork in yellowish glaze on a dark background, the effect after burning being similar to the tortoise-shell type. A similar decoration is found on the bowl in the Bristol City Art Gallery, pl. 5 b, its star-shaped central design filled with and surrounded by scrollwork. A ewer in the Boston Museum of Fine Arts and a small jar in the British Museum belong to the same group (pl. 5 a, c). The jar is of a rather uncommon shape, oviform with a short tapering neck. This shape seems to be peculiar to Chi-chou; a vase of similar shape decorated on a light-speckled ground with four zones of dark roundels is in the collection of dr D. E. Manasse.¹⁾

The second type usually has a plain brownish-black ground with brush-painted design in a lighter tone, usually yellowish or white. A feature typical of this ware is that the glaze is rather lustreless. Among the designs used the most common are a prunus twig and a crescent, or bamboo and moon; sometimes the design is very much dissolved and is closely reminiscent of the running-hand style of calligraphy (pl. 6).²⁾ Another common motif is a pair of phoenixes alternating with flowers or ling-chih funguses.³⁾ The execution of those painted designs is quite different from that of the motifs found on the bowls with paper-cutting decoration. The difference in technique is easily recognized.

4. *Sprinkled colour decoration*

We have already pointed out that the exterior of the Chi-chou bowls with a paper-cutting decoration often has a splashed or sprinkled glaze of a tortoise-shell type. This kind of glaze also occurs on vessels which have no other decoration. There is a rich variation of different types within this group, with mottled, splashed or streaked glaze. The glaze effects are often very elaborate, and it is difficult to know what is intentional and what are more or less accidental and uncontrolled effects.

Generally this ware was first glazed with a brownish-black iron-oxide glaze, and on this glaze were then applied the colours in the form of streaks, dots etc. Some of the vessels also have a thin transparent glaze applied afterwards and covering the two other layers of glaze.

This ware owes its beauty to the different shades of colour produced by the kiln transmutation. The types of vessels found in this group are mainly bowls (pl. 7 a), but long-necked vases and small cylindrical incense-burners on three legs also occur

¹⁾ Sung dynasty wares. Chün and brown glazes. T. O. C. S. 1951—53. Vol. 27. No. 123.

²⁾ This kind of design is found mainly on bowls. Cf. Eumorfopoulos cat. II. B 239, 240, 241. T. O. C. S. vol. 32 no. 192.

³⁾ Eumorfopoulos cat. II. B 235.

(pl. 7 b). The last-mentioned shape is also found in ch'ing pai, which shows the close relationship between those two wares.¹⁾

5. *Scratched design*

An interesting group of Chi-chou temmoku is that which has a scratched or cut-out design (t'i hua 剔花). This kind of design is mostly found on small long-necked bottle-shaped vases and small jars (pls. 8 b, 23 a).²⁾ But in the collection of Sir Allan Barlow there is a very beautiful vase of this kind of oviform shape, with a small neck 19 cm high (pl. 8 a). The design consists of a flowering prunus twig. Another vase very similar to this one is in the Freer Gallery of Art, but the neck on that vase is damaged and has been restored. Most probably it originally had the same kind of neck as the Barlow vase. A third piece of this kind was formerly in a private collection in Kiangsi but was presented to the Peking Palace Museum in 1955.³⁾

The technique used to make this kind of ware seems to have been as follows. The vessel is first covered with a thick black glaze, afterwards the design, mostly consisting of a prunus twig, is scratched through the glaze down to the white body. To the design, which now stands out in white biscuit against the black background, are then added some details in black with a brush, and afterwards the vessel is burnt.

An interesting bowl with scratched design is published in the CCY. Inside, it has the characters *hsieh wen* 謝汶 and outside the characters *pa chi* 八吉 (the eight immortals) and a human face (pl. 9). This type is most uncommon, and the author does not know of any similar piece in collections outside China.

6. *Plain black-glazed wares*

Besides the above-mentioned different types of temmoku wares there was also at Chi-chou a very large output of plain black-glazed wares without any decoration. Probably the black-glazed ware was one of the largest products of the kiln and the kind of ceramic mostly used in the daily life among the people of that time. There is a greater variety of form among the black-glazed wares than among the decorated wares, e. g. bowls of different shapes, vases and bottles, plates, incense-burners and small five-handled jars. Many of those vessels are quite thick and coarse in their potting, moreover, the glaze is less brilliant than that on the decorated wares. These consist of typical vessels for daily use. Some vessels have black-glazed exterior and white-glazed interior.

The dating of the Chi-chou temmoku is a problem to which little attention has been paid. Like all other temmoku wares it has been automatically attributed to

¹⁾ Wares of ch'ing pai type were made in several places not far from Yung-ho. Brankston, *op. cit.*, found fragments of ch'ing pai at Hu-t'ien 湖田, Nan-shan and Hsiang-hu 湘湖. All those places are situated near Ching-te chen, which was no doubt the main centre in the south for this ware.

²⁾ Cf. Hoyt cat. nos. 337—338.

³⁾ Wen wu ts'an kao tzu liao. No. 8, 1955. p. 151.

the Sung dynasty, and there has been no serious attempt to make a detailed investigation of the dating of this ware. No doubt very large quantities of the temmoku wares were produced during Sung time, but we know that the kiln was still operating during the Yüan dynasty up to the beginning of Ming. John Ayers¹⁾ has pointed out that the design of spiky scrollwork found on the specimens in our pl. 5 is of a type which on porcelain would certainly be associated with the 14th century. Owing to the comparatively limited number of designs on this ware and the often rather insignificant character of those designs it is very difficult to arrive at an accurate dating of this group of ceramics. Some specimens, however, have fairly typical designs, while some other specimens (outside the big bowl-group, which is in the majority) can tell us something by their shape. On the other hand, no definitive dating of this group is as yet possible; for that purpose we need a far larger material for examination, and we can only hope that further excavations on the kiln site will give us this material in a not too remote future. However, in connection with the other group of ceramics from Chi-chou discussed below we shall venture to make a few statements concerning the dating.

A GROUP OF WHITE WARES FROM CHI-CHOU

We have given a short description above of the main types of temmoku wares which were produced in Chi-chou during the Sung and Yüan dynasties. We have carried out this investigation mostly in order to show what shapes, types of decoration and decorative motifs were most common among the products of this kiln. It has already been mentioned that several other kinds of ceramics, such as white porcelain, celadons, colour-painted wares etc., were also manufactured in Chi-chou, but we shall not discuss all those different wares here; instead, let us turn to another ware, to which no great attention has been paid so far. It is very closely related to the so-called t'i hua temmoku of the type seen in our pl. 8.

This kind of temmoku with t'i hua design is more or less a standard product of the Chi-chou kiln, but during the excavation of the kiln site in Yung-ho there was also found a vessel having a white porcellaneous body with the same kind of decoration.²⁾ This vessel is very poorly reproduced in the CCY, but it is quite evident that it is of exactly the same type as a small jar in the author's collection (pl. 10 a). The excavation of the Yung-ho kiln does not necessarily prove that this is a product of the kiln. However, a comparison with the black-glazed wares (pl. 8) shows such great similarities in design and in technique that there is no reason to doubt that the white ware is a product of the same kiln. It is most unfortunate that no additional material of this type was found during the excavations, but we shall try, with the aid of material in different collections, to examine this interesting group of ceramics.

¹⁾ Ayers, J., Some characteristic wares of the Yüan dynasty. T. O. C. S. Vol. 29, 1954—55, p. 85.

²⁾ CCY fig. 8.

The small jar in the author's collection (pl. 10 a), which is almost identical with the specimen excavated in Yung-ho, has a depressed globular shape. It has a low neck, slightly contracting towards the mouth, and an almost straight foot. The base is slightly concave. It has a close-grained greyish-white body of a very smooth character, somewhat like that of ch'ing pai, which has a thin coating of light-orange or pink colour. It has a cream-coloured glaze minutely crazed with fine reddish-brown crackle. The interior of the jar is also glazed except for the inside of the cover. The jar is made in two parts. The cover has a foliated rim and a stalk knob. The design, which is limited to the body of the jar, consists of a prunus branch deeply cut into the body down to the red ground. The height is 8 cm with cover and 6 cm without, and the largest diameter is 10 cm. The similar jar excavated in Yung-ho had a height of 7.5 cm. Like all wares in this group, it is very thinly potted, and it is extremely light. It is not very hard-burnt and gives out no note when struck. The body is translucent in its thinner parts, the transmitted light having a deep orange tinge very similar to that found in Ting yao pieces, but completely different from ch'ing pai, where the transmitted light has a bluish-white colour.

In the Honolulu Academy of Arts there is a jar of almost the same shape as the two specimens mentioned above (pl. 10 b). It likewise has the foliated cover with stalk knob. The body is yellowish-white with traces of red coating and the glaze is somewhat bluish in the parts where it has run thicker. It has a brownish-red crackle, which is very red inside the vessel. The glaze has partly fallen off. This jar is likewise made in two parts. It is undecorated, the height is 6.2 cm.

In the collection of Dr. G. Hilleström, Stockholm, there is a fourth jar of a similar type (pl. 11 b). This jar is also completely undecorated. It has the same shape and the same foliated cover, but here the cover is crowned by a round knob instead of the stalk-knob found on the above-mentioned vessels. The glaze is cream-coloured with a faint bluish tint, and the fine crackle is reddish in colour. The base is slightly concave. The body is very white in the bottom, but in parts where the glaze has fallen off it shows a red coating. The height with cover is 6.2 cm.¹⁾

Another specimen in the Honolulu Academy of Arts belonging to this group is seen in pl. 11 a. This jar has a white body with small traces of red. It is very much like the body of ch'ing pai. The glaze is cream-coloured (partly somewhat bluish) and has a brown crackle. The foliated cover has a round knob similar to the one on the Hilleström jar (pl. 11 b). The body is moulded with two rows of vertically arranged overlapping petals separated by a horizontal band. The technique is similar to basket-work. This specimen is slightly larger than the other ones in this group, the height being 8.7 cm.

In the collection of Dr. Carl Kempe there is a box which also belongs to this group (pl. 12 c). It has a flat circular form with straight sides and vaulted cover,

¹⁾ There is another jar of identical shape in the Hilleström collection, but this jar lacks the cover. The glaze is more yellowish in colour, and the body is also yellowish-white. But it has the same fine crazing of the glaze and also the concave base. It probably belongs to the same group. The glaze is very much stained, and the specimen must have been buried.



Fig. 2.

and has a low ring-foot with straight sides. The glaze is cream-coloured with a slightly greenish tinge and minutely crazed. The inside is also glazed. The glaze is here a little darker and the crackle of a reddish tinge, it is somewhat Kuan-like. The cover is decorated with a prunus twig and a crescent moon cut through the glaze and showing a red biscuit. The body is pure white but is partly covered with a red coating. The base is unglazed and concave. The diameter is 7.2 cm.

A very similar piece is to be found in the collection of Mr. Eugene Bernat, Milton, Mass. (pl. 12 a—b). It has the same cream-coloured glaze with a greenish tinge and the fine crazing. The design with the prunus twig and the crescent is almost identical. The only difference between this box and the Kempe box is that the foot of the former is a little higher. Here, too, the unglazed base is concave. The diameter of the Bernat box is 8 cm. A third box of the same type with identical design and technical characteristics is in the collection of Mr. Myron S. Falk Jr., New York (Fig. 2). This box is still larger, it has a diameter of 11 cm.

However, the most interesting piece among this group of Chi-chou ware is a vase from the Schiller collection in the Bristol City Art Gallery (pl. 13). It is a small vase of bottle shape with expanded mouth and bell-shaped, spreading foot. The glaze is ivory-coloured and minutely crazed. The base is glazed. On the shoulder there is a thin ridge separating the two parts of the vessel. Between this

ridge and the mouth the design, consisting of a prunus twig, is carved through the glaze down to the unglazed paste. The height is 13.8 cm. This piece is very uncommon, and the author does not know of any similar specimen.

The specimens described above evidently all belong to the same group, and the characteristics of this group are, briefly, as follows. The body is a white close-grained porcellaneous clay (probably containing feldspar) with a very smooth surface. It is very often provided with a red coating, probably containing iron-oxide. The body is translucent, and the transmitted light has a deep orange tinge. The glaze is thin and cream-coloured, it is sometimes slightly bluish, sometimes more greenish; it invariably has a minute crazing, which is sometimes reddish.¹⁾ All specimens belonging to this group are thinly potted, and they are very light in weight; they give out no note when struck. The two most common shapes seem to be small jars with foliated cover and round boxes. The jars are always made in two parts, and they appear to have been produced — in part at least — by means of moulds. The base is concave. The design is cut through the glaze and consists either of a single prunus twig or of a prunus branch and a crescent moon.

The dating of this group of Chi-chou yao is by no means easy to establish, and a more definite date based upon the very limited material available cannot be given. We shall, however, try to make some observations concerning the shape and decoration of the vessels, which might give us some clues for solving the dating problem.

Let us begin with the small jars with foliated covers seen in our plates 10—11. These jars are all very closely related in shape, and the cover is especially characteristic, with its fairly small foliations and the knobs either round or shaped like a stalk. The closest parallel we have to this shape is found in ch'ing pai. A small jar in the Carl Kempe collection is of almost identical shape and execution (pl. 14 a). It has a pure-white body, with small traces of red, which is more hard-burnt and more of a pure porcelain than are the specimens in our Chi-chou group. The jar is made in two parts and has a concave base. The inside of the mouth is formed like a small ridge; this detail is also found on the Chi-chou specimens. The glaze is of a light blue colour, and has some small spots of dark-blue pigment; it has no crazing. The inside of the jar is also glazed, except for the cover. The body is translucent, and the transmitted light has a reddish tone. This is exceptional for ch'ing pai, which, as we have already pointed out, generally shows a bluish-white colour. The body of this jar, its technical execution and the typical depressed globular shape so closely resemble those of the Chi-chou jars that it cannot have been produced very far from Chi-chou.

Another ch'ing pai jar of the same type which is even more closely akin to our Chi-chou jars is in the Museum of Eastern Art, Oxford (pl. 14 b). This jar has the stalk knob on the cover. The two ch'ing pai jars mentioned here are perhaps

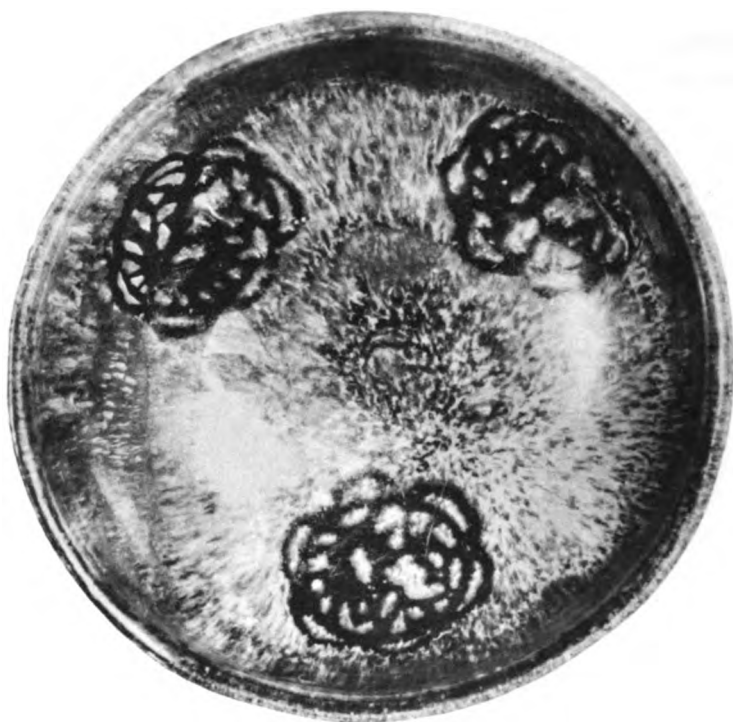
¹⁾ The slight difference in the colour of the glaze and the crackle might sometimes be due to the firing, but sometimes it is simply due to patination as a result of the specimen having been buried in the earth.



a



b



a



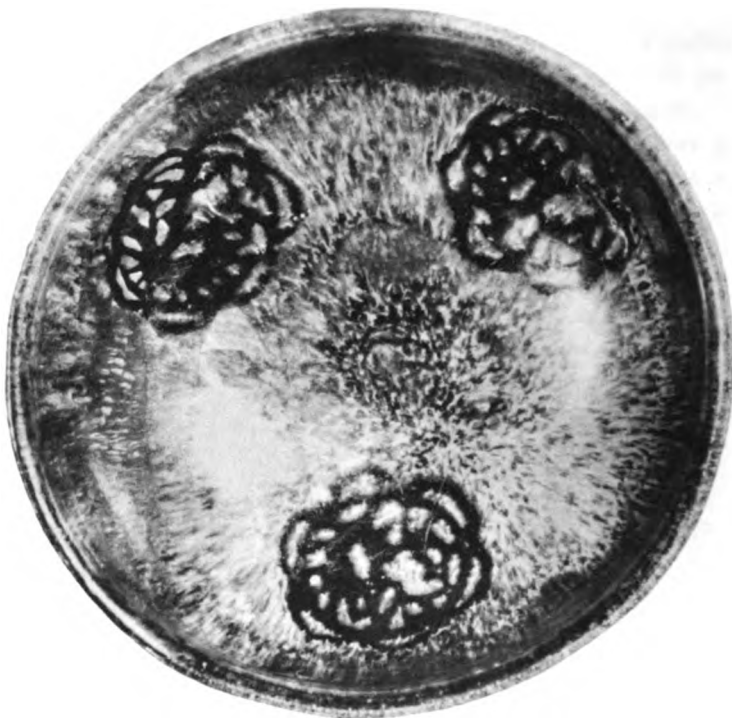
b



a



b



a



b



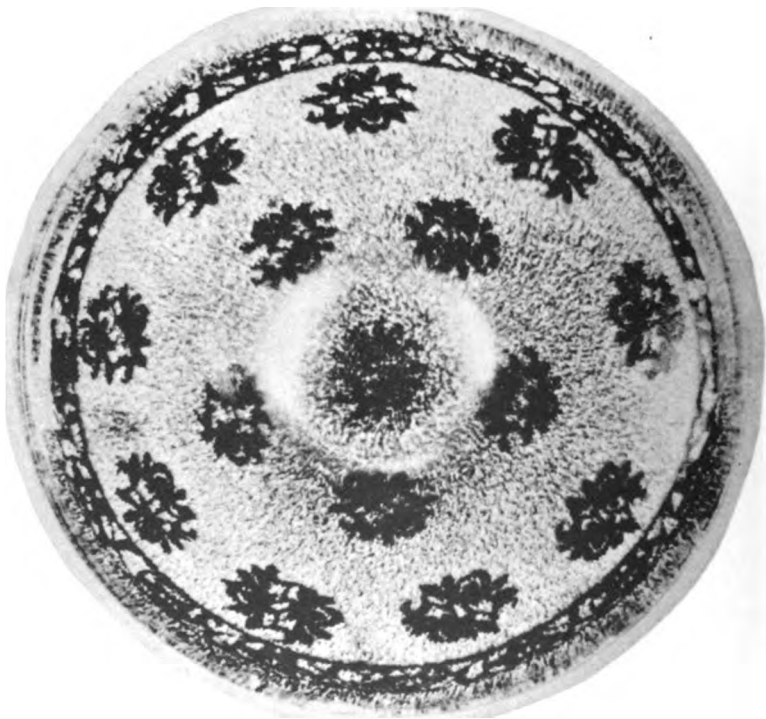
a



b



a



b



a



b



c



d



a



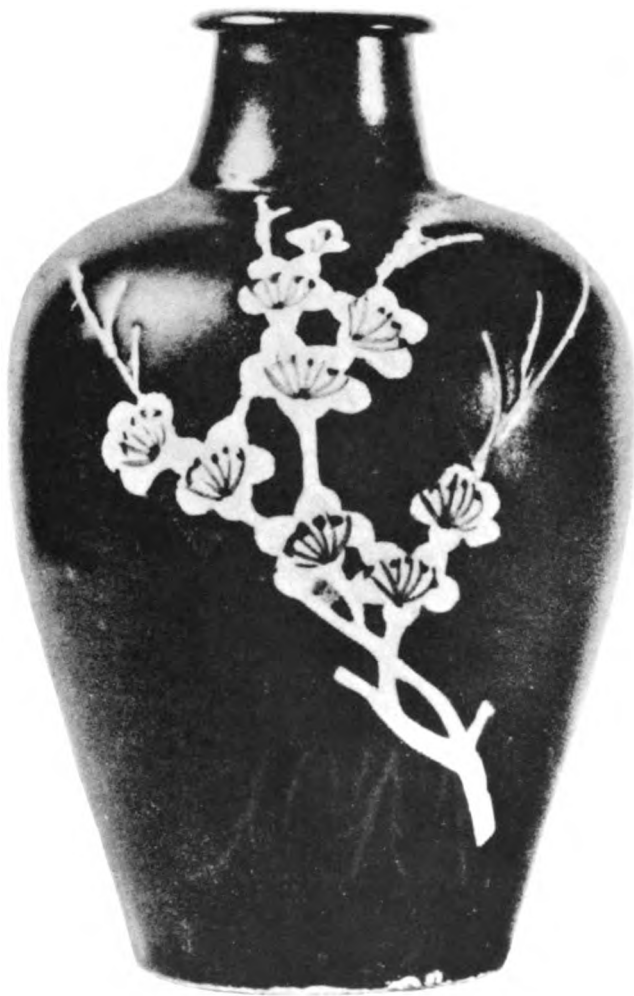
b



a



b



a



b



a



b



a



b



a



b



a



b



c





a



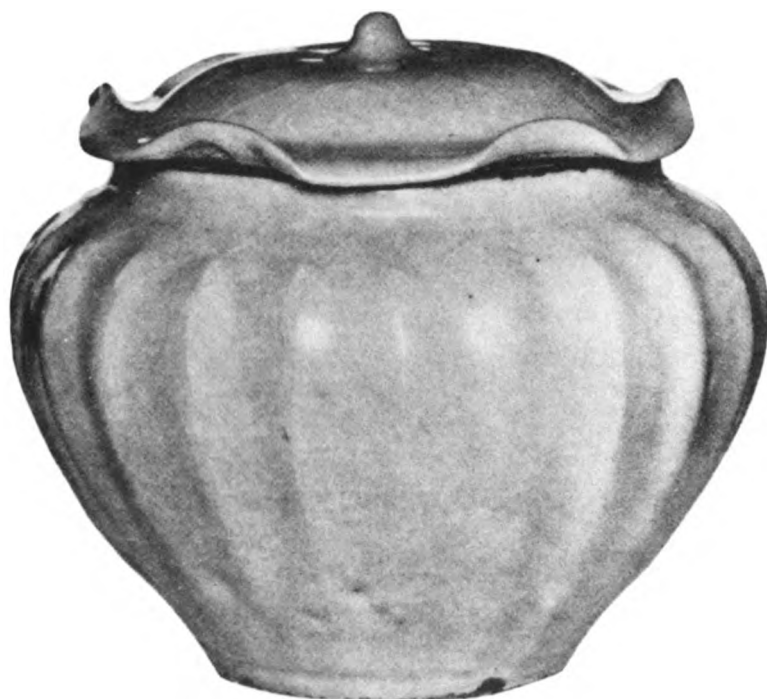
b



a



b



c



a



b



a



b



b



a



a



b



a



b



c



a



b



a



b



a



b



c



a



b

somewhat more elegant in shape than our Chi-chou pieces, but they must be almost contemporary with the latter.

In the celadon group we can also find specimens of a shape similar to that of our jars. Two small jars in the collection of Carl Kempe (pl. 15 a—b) are somewhat related, and a Kuan jar in the collection of Mrs. Alfred Clark even has the foliated cover (pl. 15 c). The foliation of this cover is not so multi-foliated and the shoulder is higher. Of a similar type but with a more rounded belly is a ch'ing pai jar in the Carl Kempe collection (pl. 16 b). This jar likewise has a foliated cover, and on this cover small veins are painted in slip. This indicates that the foliate shape of the cover is here intended to represent a lotus leaf. A further development of this association with a lotus flower may be observed on an early blue-and-white jar in the collection of Sir Harry Garner (pl. 16 a). Here the veins of the lotus leaf are clearly visible, and the lotus motif is also painted on the jar. A celadon jar in the Serai collection in Istanbul also has the foliated cover, but here both the cover and the body of the vessel are ribbed (pl. 17 b). Small celadon jars of tobi seiji type with slightly foliated covers are also quite common (pl. 17 a).¹⁾

If we were to try to arrange these different jars with foliated covers chronologically, we should be bound to think that the evolution began with the more depressed globular shape and developed into the jars with a high accentuated shoulder. The foliated cover seems to have developed from the multi-foliated type to the type of leaf-shape with painted veins and fewer foliations, but the lotus-leaf-shaped cover is found already during T'ang and it is common during the Five Dynasties and early Sung, which seems to indicate that the multi-foliated type is merely a variety. However, this variety seems to be earlier than the specimens with painted veins, and it is not found during the Ming dynasty.

The blue-and-white jar in the collection of Sir Harry Garner has been attributed to the first half of the 14th century, and the celadon jar in the Serai collection is of a type also generally accepted as dating in the 14th century. The ch'ing pai jar in the Carl Kempe collection (pl. 16 b) is of a somewhat heavy type which has also been associated with the Yüan dynasty. The tobi seiji celadons are probably of Yüan origin, as has been pointed out by Ayers²⁾, who attributes a 14th century date to the pieces of this type as well (pl. 17 a). The Kuan ware jar (pl. 15 c) is not easy to date definitely, but there is no reason to date it later than the 13th century. If this brief attempt at a chronology is correct, our Chi-chou jars and the related ch'ing pai specimens should not be later than the 13th century.

If we now turn to our Chi-chou vase (pl. 13), it will prove to be far more difficult to find a vessel of a related shape. This shape is fairly uncommon, but it has some characteristic details, e. g. the expanded ring-shaped mouth and the spreading foot. In his article on "Chinese ceramic wares from Hunan" Isaac Newton³⁾ has published

¹⁾ In the Hoyt collection (Hoyt cat. no. 385) there is a small ch'ing pai jar with brown spots of related shape and technique.

²⁾ Ayers, John, *op. cit.* p. 74.

³⁾ Far Eastern Ceramic Bulletin, Vol. X, nos. 3—4. 1958, p. 47. Cf. also "Some coloured and white wares from Hunan" by the same author in T. O. C. S. Vol. 27, 1951—53, p. 33.

a small group of specimens which are unlike the other wares known to have been made in that province, but which have several characteristics in common with our Chi-chou group. Newton describes the specimens as being made of a white ware very light in weight, the glaze is cream-coloured and crazed, and they are thinly potted, showing an orange colour on transillumination. One of these specimens is a vase (pl. 18 a) which has a spreading foot and an expanding mouth. This vase is very closely related in shape and also in technique to our Chi-chou vase, and it also was probably made in Chi-chou.

Among the southern Kuan yao there are also specimens of a shape related to that of our Chi-chou vase, especially in the rendering of the mouth¹⁾ and some other details, but closer than that there are no points of resemblance.

There is, however, a group of ch'ing pai specimens which are closely related, especially in the potting but also in shape. The ch'ing pai vessels of this type have been considered by some authors to be of very early Sung date, sometimes even T'ang. But a closer examination of this group shows undoubtedly that, on the contrary, they belong to the late Sung and early Yüan dynasties. Their close relationship with the early blue-and-white is undeniable. A vase of this type in the former Eumorfopoulos collection (pl. 18 b)²⁾ has the same kind of mouth as our Chi-chou vase, and the raised band on the neck is also of a similar type to that found around the belly of this vase. The porcelain of which this group of ch'ing pai is made is white and granular, often somewhat impure, and partly burnt red. The glaze is greenish-blue, often very much crazed and discoloured. The ware is very light.

A ch'ing pai vase of much more elegant shape and fine quality is in the Hoyt collection in the Boston Museum of Fine Arts.³⁾ It has a pear-shaped body, wide mouth and bell-shaped foot, and it is provided with two ring-handles. This shape might very well be a development and a refinement of our Chi-chou vase, but at the same time it is the prototype of the early blue-and-white vases. The famous blue-and-white vase in the collection of Mrs. Alfred Clark (pl. 19 a) and the similar one formerly in the Oppenheim collection⁴⁾, both belonging to the first half of the 14th century, are no doubt closely associated with the Hoyt ch'ing pai vase. In this connection mention must also be made of a vase in the British Museum (pl. 19 b) identified by the aid of Brankston's fragments as hailing from Chi-chou.⁵⁾ It is of a creamy-buff stoneware painted in golden-brown under a transparent glaze. The lotus-plant design on the neck and the wave design in the panels, as well as the spiky scrollwork ground on the body, point to a late 14th century date. This vase is of an elongated pear-shape with two fish-handles.

We have not been able to find such close parallels to our Chi-chou vase as to permit of a dating being based upon them, but in the light of the specimens dealt with above it is unlikely that our vase could be later than the 13th century.

¹⁾ Gray, Basil, *Early Chinese Pottery and Porcelain*. London 1954. Pl. 86.

²⁾ Eumorfopoulos cat. Vol. II, B 41. Cf. also B 43.

³⁾ Hoyt cat. no. 381.

⁴⁾ T. O. C. S. 1924—25, Pl. 3.

⁵⁾ Brankston *op. cit.* Pl. 6 b. Cf. also. Ayers, John (*op. cit.*) p. 85.

Let us now examine the designs found on our white Chi-chou group. We shall find that they are extremely limited. They consist either of a prunus twig or of a prunus twig and a crescent moon. The prunus design we have already found on the temmoku wares, viz. on the type with designs made with the aid of paper-cuts (pl. 2 b), the type with painted design (pl. 6) and the type with scratched design (pl. 8, 23 a). The last-mentioned type is most closely related to the white ware, as the technique used here is quite the same, but all those prunus designs are very similar. Otherwise the prunus design is not particularly common in Sung ceramics, but it seems that in the later part of the period it became one of the favorite subjects.

The prunus design turns up on other ceramic wares as well. A Ting yao bowl in the Museum of Eastern Art in Oxford has an incised prunus design on the interior and a wave pattern in the centre (pl. 20 c). This bowl is of a type which we generally accept as southern Sung. Another bowl of Ting type in the Eugene Bernat collection has the prunus and crescent-moon design painted in slip under the glaze, the design being in slight relief (pl. 20 a—b). This bowl has a greyish-white glaze, and the shape is conical with straight sloping sides. To judge from the shape and the quality of the body and glaze, this bowl is most probably of Yüan date.

Let us now turn to the celadons. In the Eugene Bernat collection, again, there is a small celadon bowl of conical shape which has the prunus and crescent design on the interior (pl. 21 a—b). The decoration is boldly carved in a free and elegant style. A very similar celadon bowl in the A. Schoenlicht collection, New York¹⁾, has the same design, but on the rim it has an additional scroll-border. In the British Museum there is an interesting celadon piece that formerly belonged to the Eumorfopoulos collection (pl. 22 b). It is a dish with low, rounded sides and the rim shaped in five foliations. It has a grey-green celadon glaze. The design is in red biscuit with traces of white and a little yellow glaze, and consists of a garden rock, a flowering prunus and a crescent moon. Besides this design there are a prunus spray and bordering lines faintly incised (this incised design is very closely akin to the design found on the previously mentioned two celadon bowls). This dish with the design partly in biscuit belongs to a series of similar dishes which are typical of the Yüan dynasty.²⁾

The prunus design is likewise to be found on the early blue-and-white porcelain of the Yüan dynasty. A small jar with two ears in a Japanese collection has a painted design of a prunus branch (pl. 23 b), and a big jar, also in Japan, which is painted in typical Yüan style with wave-border, scroll-border and lotus scrolls, has a pine tree, a bamboo and the prunus with a crescent moon around the belly.³⁾

An interesting object which should be mentioned in this connection is a small round lacquer box in the collection of Mr. Soame Jenyns (pl. 22 a). This box has a prunus design inlaid with mother-of-pearl, which is very much akin to the similar decoration found on porcelain. This box has been dated by Jenyns as Sung-Yüan.⁴⁾

¹⁾ Visser, H. F. E., *Asiatic Art*. Amsterdam 1947. Pl. 132.

²⁾ *Chinese Art*. Catalogue. Venice 1954. Pls. 430—431.

³⁾ Sekai Toji Zenshu. Vol. 11. Pl. 32.

⁴⁾ Jenyns, S., *Chinese Lacquer*. T. O. C. S. Vol. 17, 1939—40. Garner is inclined to date this piece somewhat later and attributes it to early Ming. T. O. C. S. Vol. 30, 1955—57, p. 42.

Mention has already been made here of several examples of the prunus and crescent design on ceramics, and all the examples given seem to justify a late Sung and Yüan date for this design. Dealing with the shape, we have come above to a similar dating of our white Chi-chou group, for reasons of form. This must lead us to the conclusion that this group of ceramics was most likely produced during the 13th and early 14th centuries.

We shall now return to the temmoku group and see if it is possible to obtain some clues to the dating of this material as well. We have already mentioned above that the spiky scroll-work found on some of the Chi-chou temmoku vessels with painted designs (pl. 5 a—d) would, on porcelain, have certainly been associated with the 14th century. In the group of temmoku vessels with splashed design we have reproduced an incense burner on three legs (pl. 7 b). In the collection of Dr Carl Kempe there is a specimen of the same shape, which has a blue ch'ing pai glaze minutely crazed (pl. 24 b). The body of this incense burner is pure white, but burnt red in the firing. The ware is very closely akin to our white Chi-chou group, and it also has a red tone when transilluminated. A third specimen of the same shape was found in Yung-ho (pl. 24 a) and has a painted design of a flower panel on a wave ground. The wave design on this incense burner undoubtedly points to a 14th-century date.

Another small jar with a design in reddish paint, also found in Yung-ho, likewise has a wave ground (pl. 23 c). This jar is related to the early blue-and-white and underglaze red in the painting, but at the same time it is of exactly the same shape as the four-handled temmoku jar in Boston with prunus design (pl. 23 a). The beautiful vase of the same ware in the collection of Sir Allan Barlow (pl. 8 a) has a characteristically shaped neck, which is also found in early blue-and-white.¹⁾ Here again there seems to be some justification for an early 14th-century dating.

Most of the decorative motifs found on Chi-chou temmoku specimens are rather insignificant, but the symmetrically arranged floral sprays, the panels with flowers and the pair of phoenixes are all of a type to which we can find parallels in late Sung ch'ing pai and Yüan Shu-fu ware²⁾, celadon and underglaze blue-and-red painting.

An attempt has been made here to describe some of the most typical decorative motifs and shapes found among the Chi-chou wares examined above and to give them a date. Our brief investigation has led to the conclusion that most of the Chi-chou vessels described here belong to the 13th and 14th centuries. We must now examine some of the historical facts known about the Chi-chou kiln and see what they can tell us.

At the beginning of this article we cited the passage from Ching-te chen t'ao lu dealing with Chi-chou. In this quotation is also reproduced the ancient passage

¹⁾ Cf. Sekai Toji Zenshu. Vol. 11, pl. 27.

²⁾ The Shu-fu ware undoubtedly has several of the decorative subjects, e. g. the prunus branch and the birds, in common with the Chi-chou ware, and also a similar stiff symmetrical arrangement of the design.

from Ko ku yao lun saying that when Wen T'ien-hsiang, the Sung premier, visited Chi-chou, the vessels in the kiln all turned into jade and the potters fled. We do not know how this strange story arose, but like most old tales there might be a grain of truth in it. The key to the origin of this story might simply be that an accident of some kind happened to the kiln, the workers might, for instance have misfired some vessels and then fled in order to avoid punishment. It is, however, most unlikely that this incident should (as in the text) have taken place at the beginning of the Yüan dynasty. We know from the excavated material of sherds and seggars found on the kiln site that the kiln must have still been active during the Yüan dynasty. On the other hand, the accident which the texts alludes to might not have caused the total abandonment of the kiln but only marked the beginning of the period of decline. There must have been several different reasons for this decline.

We know that at this time the Chi-chou kiln was still controlled by the government and that the economic situation in China was very bad at the end of the Sung dynasty. Probably the kiln had economic difficulties caused by heavy taxation and impoverishment through the officials. But the main reason for this decline and the economic difficulties was certainly the new fashion with its predilection for the blue-and-white porcelain of Ching-te chen. Since the large-scale manufacture of porcelain had been established there, it must have been very difficult for the smaller kilns in Kiangsi to compete, and the demand for the blue-and-white wares caused the end of the production in those kilns which could no longer find a market for their ceramic products.

The author of the CCY states that the Chi-chou kiln had its most active period from the 10th to the 12th century. But he also admits that the kiln must have continued its work during the Yüan dynasty. That the district round the kiln site was still prosperous during Yüan is shown by the fact that a temple called Ch'ing Tu Kuan was built in the Chih Yüan 至元 period. An iron bell from this temple has been found among the kiln ruins. The inscription on the bell reads; "Chih Yüan 2nd year *t'ai sui ping tzu* (1336) the 10th month the ? day the taoist of this temple Li Yü Hsien. . . to write. Great Yüan country. Kiangsi province. Chi-an lu. Lu ling hsien. Yung-ho. Ch'ing Tu Kuan gathered the contribution from the benefactors of different places. . . to cast this big bell, the weight is more than 1000 *chin*."

From this evidence it seems as if the taking over by the Mongols did not cause any interruption of the production here. From the Ko ku yao lun we know that at the time of Yung-lo (1403—24) the kiln was already in ruins and that some excavations had been made here. The kiln accordingly seems to have been abandoned some time at the end of Yüan or the very beginning of Ming. We have already suggested that two of the main reasons for the cessation of production in the Chi-chou kiln might have been economic problems and difficulties in competing with Ching-te chen, and both those causes must have contributed to the decline of the kiln. But a closer inspection of the material found during the excavations gives strong evidence to show that the immediate reason for the abandonment of the kiln must have been some serious catastrophe. The kiln gives an impression of having been abandoned in a great hurry and quantities of valuable implements etc. have

been left behind. At one of the ruins (no. 12), for instance, valuable iron implements were discovered to a weight of several hundred *chin*.

The cause of this disaster we do not know, but it might have had something to do with the breakdown of the Mongol empire or it might have been a serious natural catastrophe. It is possible that further excavations on the kiln site will throw some light on this problem.

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NOTES ABOUT THE TAI

BY

K. G. IZIKOWITZ

A culture does not arise ready-made and this applies also to the remarkable and unique Chinese civilisation. To place this civilisation in its cultural setting, either historically or geographically, has long been wished. In the latter case it would be seen as part of a greater cultural region or situated at the intersection of several regions. Both these approaches are quite legitimate and in both cases they apply to a non-recurrent event.

It might also be possible to regard this culture as a concurrence of several general principles. The bases for these would have to be clearly defined and obtained by an intensive synchronic analysis of Chinese society. In this case the relationships between the different categories in the life of the society would have to be investigated and the different phenomena fitted into the whole. As a matter of fact these three approaches are complementary.

Reliable documents of the oldest Chinese culture are, however, few and difficult to interpret. The archaeological evidence has considerably increased over the last few years but gives us hardly any information about the social conditions of the past.

In order to place the oldest Chinese civilisation in its cultural setting, geographically speaking, we need comparative material from other parts of China and their vicinity. This is, however, lacking from older epochs. Material from a later time is still very limited, especially as up to now field-work by modern methods has been rather scarce. This particularly applies to the peoples living south of the Chinese.

The ethnography of South China is still far from being completed and by and large the sinologists do not seem to have been interested in this area which came under Chinese domination so lately. It is not surprising that anthropologists have not dealt with the South Chinese tribes to a greater extent, as very few have taken an interest in South East Asia at all.

Considering the rarity and sporadic nature of the available material, I would like to add a few notes, with this essay, on two different Tai people I once visited, as a small contribution to the material on this unknown world.

It would be of very great interest to gather material from the Tai tribes. Much valuable information could be obtained as they mostly have their own script as well as rich stores of myths, proverbs, tales and songs. I do not think it would be difficult to get good spokesmen amongst the Tai to write these down themselves.

During my stay in Indo-China, in 1936—38, my investigations were mainly concentrated on the Lamet tribe in North Laos, but I also had the opportunity of contacting several different Tai tribes. Most of these tribes were Lao but I also came into contact with the Lu, both those living in Tafa and those living in Muong-Sing. At the latter place there were also several other Tai tribes; among them were the Tai Neua which are otherwise mainly found on Chinese territory. In Muong Luong Namtha I also met an enclave of the Black Tai which had come there a number of years before from the area around Dien-Bien-Phu (Muong Theng). I also paid some short visits to the Black Tai and to the Tai Neua in North Laos, as well as to the White Tai in the Lai-chan district.

The time before my going home was spent with the Black Tai where my research was conducted from my headquarters in Muong Theng (Dien-Bien-Phu) and Son-la. From there I did some reconnoitring with the hope of coming back later to undertake a more thorough investigation. This intention was never realized as the War broke out just as I was ready to travel out there. Since then the majority of the Black Tai are to be found within North Vietnamese territory.

My visits there were of a temporary nature and my short reconnaissance mainly aimed at determining the area which was to be my headquarters or starting point for future field work. It is obvious that I had not much opportunity of acquiring any considerable material. But now that it is impossible to do any field work in this area, even a few small notes might be interesting. The Tai peoples are unfortunately anything but fully investigated and there remains almost everything to be done in all fields. In particular this is true regarding their family and political structure about which we have far too little knowledge. As most of the Tai peoples have writings and also documents of great interest, these could supplement modern field work — which ought to be done as soon as possible, before it is too late.

The notes presented in this short essay are only a few selected ones.

The Lu

During my investigations of the Lamet tribe, my headquarters were in a Lu village called Tafa. This Tai village lies conveniently in the middle of the Lamet district, on a caravan route linking Houeisai at the Mekong with Muong-Sing and other important villages in the north. The Lu who lived there at the time of my visit had immigrated from a village at the other side of the Siamese border. The man who had been the leader of the immigration was the then head of the village. He had first reconnoitred several places and then finally convinced those Lu who were interested that this was the best place for settling. Tafa, which means the bathing place of the monks, was formerly inhabited, but when the Lu arrived the place was overgrown

with large trees, they said. There are supposed to be remains of an old stupa.

Thus there ought to have been a small monastery, but this was probably not built of stone but of wood, which is common in these parts. In this area only the Tai tribes are Buddhists. There are, however, the inhabitants of Vieng Phouka, which is a large village further north and a meeting place for several caravan routes. The inhabitants of this village are Khmu-speaking and as far as I know they are the only Buddhists apart from the Tai. Legends tell of the influence of the Siamese on Vieng Phouka in ancient times. These Khmu who went over to Buddhism no longer wished to be called Khmu but have taken the new tribal name of Khouen.

The Lu who lived there at the time of my visit, in 1937—38, had arrived there in 1897. The people in the villages on the other side of the Mekong had not been living there very long as they had originally come from the Ou-Neua district in northernmost Laos. Some of the inhabitants, a few families, had come from still further north in China and one person maintained that he was born near the Wa territory on the Burmese border.

In February 1938, just as I was about to leave the village, it was divided into two camps, one of which wanted to move and was looking for a new area nearer the Mekong to settle. The reasons for this are too complicated to mention in this short essay. The discussion was very heated and unfortunately I never really gathered if any of them ever moved away and formed a new village. In any case they were pulling down some houses when I left. All this shows how frequently they moved and over how large a territory. This does not mean the removal of a village as a whole but either of a few families or a larger part of the village. The distance between Ou Neua and the Siamese villages at the other side of the Mekong might be something like 350 kilometers, and the distance from the Wa territory is considerably longer. Thus the distances concerned are not small. It would have been interesting to learn more about such movements also in other Tai tribes. With their neighbours the Lamet, such a division of the villages is very common but is kept within a limited territory. The Lu spread themselves over a much wider territory but we must not forget that the Lu, like several other Tai tribes, are dependent on land suitable for watering their rice fields. They preferably want to live near rivers. The village of Tafa lies on the banks of the Nam Ngao, a tributary of the Mekong. This river is difficult to navigate even with small canoes.

Thus in Tafa it was the village head who was also the founder of the village and who had persuaded a certain part of the population to follow him. He was forever pointing this out and boasting of his will-power as a leader and his ability to make others follow him.

This is not an uncommon theme in East and S. E. Asia, and it is often the founder of the village and his offspring who are the heads. While the founder is alive there is, of course, no cult around him.

The sacrifice to Phi Muong

One of the most important feasts of the Lu is the Spring Feast which took place on May 27th in 1937. The day before, money was collected to buy a buffalo from one of the villagers. Every one of the older people contributed two sous while the younger people gave one. During the night the purchased buffalo was tethered beneath the house belonging to the most important of the three sacrificial priests who were going to officiate. In the morning the buffalo was led by the grown men to a sacred glade just on the outskirts of the village, where there was a permanent altar, before which a stout pole to bind the buffalo to had been driven into the ground. This pole was very roughly made and was in no way ornamented or decorated.

The buffalo which is to be sacrificed is killed with a special lance. But as the Lu are more or less faithful Buddhists no one wanted to kill the beast. Instead they hired a Lamet to do it. But before the sacrifice could take place the spirits had to be invited to be present. The altar consisted of a small platform some six or seven feet long with an overhead shelter supported by two pillars. The platform was divided into three parts, one for each of the spirits to whom the sacrifice was made and each of which had its own celebrant. The most important spirit was Phi Muong, that is the spirit of the Muong, the second was the spirit of the large salt mine and the third the spirit of the small salt mine.

The three priests knelt before the altar and recited prayers to make the spirits come. Before every prayer they sounded a gong which was hung on one of the pillars.

The sacrificial platform was covered with a bedding of fine, homewoven, patterned cotton sheets. There were also a great many bowls that were to be filled with the sacrifice. The three celebrants then said a prayer inviting the spirits to assist in the sacrifice of the buffalo.

They said: "On this occasion we invite Tiao Fa Luong (the Great Spirit of the Heavens) who is so kind and the spirit of the great town (who was the guardian spirit of the place of old when there were many buffaloes). We invite the Great Spirit to come and partake." Then followed a whole row of names of different spirits.

The man who was to kill the buffalo then came forth and dancing round the buffalo three times he raised his lance with both hands towards the heavens each time he passed the altar. He stabbed the buffalo slightly in the side, rather carefully, and then began the wild dance of the buffalo around the sacred pole. The buffalo is not felled immediately but the man with the lance must wait until it has its head to the north. Not until then can the fatal blow be given, felling the buffalo. This is considered very important as otherwise the coming harvest would be poor. The blood is collected in some of the bowls from the platform and the men assembled divide the buffalo quickly into twelve pieces. Why just twelve I was not able to ascertain. The head is severed

from the body and without being flayed or having its eyes taken out or having anything done to it, hung on the tip of the sacred pole with its nose facing north where the evil spirits are supposed to come from.

Immediately after this the meat is cooked in pots placed out beforehand and various dishes are prepared from the sacrificed buffalo. There is *lap*, chopped meat, *lap* mixed with blood from the buffalo, roast meat, etc. The bowls from the altar are then filled with the different meat dishes, one bowlful of each dish for each of the three spirits.

The three sacrificial priests kneel again before the altar and invite the three spirits to come and eat. But before doing this they pour rice spirit over each bowl saying:

"We have cooked *sa*,¹⁾ sweetened and red, soup sweetened and red,²⁾ balls of rice and many other dishes which we have placed on the altar and poured spirit over as an offering to you, to the spirits which guard the village, to the spirits of the mines,³⁾ to the spirits of the rice fields and the green mountains.

We invite you to eat as much as you like of this food which we have prepared as an offering to you."

To find out if the spirits have accepted the invitation, one of the priests carries out a divination. He takes a few grains of rice in one hand without looking to see how many he has taken. He then opens his hand and counts the grains. If there are an even number of pairs up to a maximum of twelve the spirits are considered to have answered the invitation. If there are more even pairs than twelve the spirits have not yet come. If, on the other hand there are an uneven number of grains they are definitely not coming, which is considered unlucky. The sacrificial priest succeeded this time; if he had not I do not know what would have happened. If the number of grains had been an even number over twelve, the prayer and divination could possibly have been repeated.

The assembled men began to eat and drink together. When the meal was finished, the remaining food was taken to the village to be eaten by the women and children. They were not allowed to take part in the sacrifice at the sacred glade.

Later in the afternoon, a couple of hours before sunset, the young people of the village gathered on a flat piece of land by the banks of the Nam Ngao. A long piece of rattan is brought out and there is a tug-of-war between the boys and the girls. As many as there was room for took part and the girls' team won. The reason for this was said to be that they had such strong legs because they remove the husks from the rice every day by treading on a

¹⁾ *sa* = finely minced meat mixed with all sorts of aromatic vegetables and lemon juice.

²⁾ red = coloured with blood.

³⁾ In their old habitat in Ou-Neua there were two salt-mines, one with a male, the other with a female guardian spirit.

lever which pounds the rice. This was not quite correct, as I was later told that the girls were meant to win, otherwise the harvest would be poor.

After this, during the hour before sunset, followed the traditional ball-game which is mentioned as occurring in so many Tai tribes. On one side stood the girls' team and on the other side the boys'. The ball consisted of a triangular cloth bag made of many different coloured strips of material. It was filled with rice husks and decorated with ribbon or a fringe, also of many colours. It could easily be seen that a certain boy threw the ball so that it could be caught by a certain girl. At this point a group of girls detached themselves and crept behind the boys' group and stole some of their belongings. I have observed this custom in several Tai tribes when attending their feasts but I have never understood the meaning of this thieving in jest. Soon after sunset they all separated but far into the night alternating songs between boys and girls could be heard.⁴⁾

During the day of the feast no work was done and no stranger was allowed to enter or leave the village. On the four paths leading to the village *taleo* were placed, i.e. hexagonally plaited trays made of bamboo and fastened to a bamboo stick. These are the usual signs used by most of the Tai tribes in this district and mean "no admittance".⁵⁾

When this feast has taken place, transplanting of the rice can begin. However, a short ceremony for the soul of the rice is held before this takes place. Seven young rice plants are planted in a special place in the rice field. A small platform is built by the side of them, on which flowers, candles or balls of cooked rice are offered. *Taleos* are placed in the four corners. A small basket is fastened on each *taleo*, in which the soul of the rice is regarded to be. Transplanting can now begin and it is one of the main tasks of work in this district.

The object of the seven rice plants is 1) that the roots of the rice may find good soil, 2) that the stalks of the rice will always be glad, i.e. grow upright, 3) that there will be as many *mun* of rice as possible harvested (one *mun* is about twelve kilo), 4) that all the rooms of the house will have many women, 5) that there will be many cousins (the kin will be numerous and will increase), 6) that there will be many sacks of shining gold, 7) that there will be a lot of rice in the barns.

When the transplanting is over, the seven rice plants are parcelled up in banana leaves and put in the barn. The soul of the rice is then invited to enter. Young plants of banana and sugar-cane, flowers and candles are laid in a basket which is placed next to the seven rice plants and the following is said:

"To-day is a good (lucky) day and the weather is fine and all my rice fields

⁴⁾ I heard similar songs also with a group of Lantène (a Man tribe) about the same time when passing their village.

⁵⁾ A. W. MacDonald: Notes sur la clostration villageoise dans l'Asie du sud-est, Journal Asiatique, 1957.

have been planted. Now we come with flowers and young banana and sugar-cane plants and invite you (spirit of the rice) to come and live in the barn."

— After this the seven rice plants are cut with a sickle, covered with banana leaves and laid in the basket, on which a *taleo* is fastened.

This custom is very reminiscent of the one found amongst the Lamet when flowers are used to entice and lead the spirit of the rice to the right place, that is, the barn.⁶) The seven rice plants closely parallel the rice sheaf of the Lamets, which also symbolizes the spirit of the rice and its increase in order that the harvest shall be good. The offering of young plants of such a vigorous nature as the banana and sugar-cane is an act of magic designed to strengthen the power of growth. *Taleo* are regarded as a protection against the intrusion of evil spirits.

The Black Tai

Sometime later in the spring of 1938 I had the opportunity of making a tour of reconnaissance for a few months in part of the area inhabited by the Black Tai. I shall limit myself to a few details.

The so-called Black Tai live on both sides of the Black River and the Song Ma, right up in upper Tonkin and also in all of the Dien-Bien-Phu area. Their habitations are concentrated in the valleys and along the rivers, as they move about very little on the land but more on water in their canoes; one could compare the rivers to paths connecting the different Tai villages. The villages vary greatly in size from very large villages, which often have feudal officials, to small hamlets. One of the largest Tai villages I saw was Muong Het, which had about 200 houses. This village was divided into different quarters, each with its own official.

In the mountain valleys irrigated rice was mainly grown and not only there but also to a certain extent on terraces somewhat above the valley, as far up as water can be taken. The irrigation technique is a gravitational one: a dam is built far up a river, and then the water is led in canals along the terraces and down into the valley. They also use the swidden technique up in the mountains but they do not cultivate so much rice there. Rice growing is mainly confined to the irrigated fields. In the mountains it is possible to grow cotton, indigo, vegetables and many other things. During the rain period they have sufficient water for watering, which enables them to have one rice crop a year. During the dry period they grow things in their gardens and to water these they use *norias* which pump the water to some terraces above the valley.

The whole Tai area was originally a federation of twelve Tai states called Sippsong Chau Tai, which means the twelve Tai states. Each of these states was divided into several *muong* and these muong were relatively independent,

⁶) K. G. Izikowitz: Lamet — Hill peasants in French Indochina. (Etnologiska Studier, vol. 17, Göteborg 1951. P. 247.)

which was still the case when I visited them. The land within the muong is communally held, but such land that can be irrigated, that is the irrigated rice fields, is differentiated from that which is used for dry cultivation. The former is divided amongst the members of the muong in a special way which I shall now describe, while the latter is more or less regarded as a common, where every member has rights of usage. It is the irrigated land which is especially valuable, but it is rather limited. This depends on the supply of water during the rains. One cannot, of course, have terraces and the irrigated rice fields higher up the slopes of the valley than the water can be led. In principle this land is divided between the different members, but in order to understand how this is done it is necessary to say something about the structure of the society.

It is evident that the irrigation system — the digging and maintaining of channels, dams — demands a large amount of co-operation from the members of the muong. This is indeed the case, they help each other; a large labour force can be assembled in one place and there is apparently a great feeling of unanimity where work is concerned. As an example of this may be mentioned an incident crossing a stream on my return journey by lorry. The bridge had been damaged by the strong current. I immediately asked for help to get the bridge repaired as soon as possible. Very early the next morning practically every able-bodied man from the nearest Tai village came and they repaired the bridge very quickly.

Besides rice, cotton and indigo are cultivated to a large extent — the Black Tai are well-known for their fine cotton cloth. In the valleys they cultivate the mulberry tree whose leaves are used to feed silkworms. There is a special part in every Tai house devoted to rearing silk worms.

Amongst the Black Tai there is a patrilinear joint family in every house. The houses can be very large and hold many people. In particular the higher officials in these parts have very large houses as they must be able to give feasts and entertain strangers. The whole Tai population is divided into large groups of relatives each of which has its own "totem", but I am uncertain whether they should be regarded as true clans. Such a group is called a *hing* and is possibly connected with the similarly sounding Chinese word. One is not allowed to marry anyone having the same surname or family name. There are only eight types of these family names. These groups are subdivided into three different social groups or classes, noblemen at the top, priesthood next and ordinary people at the bottom of the scale. The nobility, *lo hing*, is divided into four different, exogamous groups. The clans of the lowest class — where one can almost speak of clans — have their own myths of origin which relate how the clans were formed and why certain things cannot be used. Curiously enough these clan myths are the same as those I found among the Lamet.⁷⁾ There are a number of things which point to the fact that the Tai tribes

⁷⁾ K. G. Izikowitz, *op. cit.* Pp. 86—99.

invaded this area and subjugated the original population, absorbing and, so to speak, *taiifying* them. It is also said amongst the Tai that several of the clans belonged to the original population. According to my informants these clans, however, are no longer of any importance, they are no longer exogamous among the commoners of the Black Tai. A commoner must marry within his own class and thus cannot marry a woman from the priestly class or from the nobility. On the other hand the opposite can happen, a nobleman can marry a commoner. The same applies to the priestly class which cannot marry into the nobility. Polygamy is allowed but mainly occurs within the nobility.

The political organization is highly important. There is a head for every *chau* but there never appears to have been a king or anything of the kind common to all the twelve Tai states, but apparently they formerly formed a federation. The head of a *chau* is called a *tri-chau* and a chief of a *muong* is called a *céng tong*. Under him there were two officials, one called a *fia di* and the other a *fia fo*. All these officials come from the *lo* clan, from the nobility. There are three grades within the priesthood, *ong mo*, *ong nie* and *ong chang*. They are all sacrificial priests and tend the sacrifices for the *phi muong* or the spirit of the *muong*. Among the clans of the commoners there is a whole scale of different officials. There are, in the first place, four notables: *ong sen*, *ong pong*, *ong horung*, and *ong pongkang*. They serve under the two *fia*, and their task is to find porters and workers and to nominate the day-labourers for duties on the domains of the nobility. There are also lower officials, so-called *thua*, of three kinds, who act as secretaries to the nobility. The chiefs over a group of villages are divided into five categories and after them in rank come the village chiefs and the deputy village chiefs.

There are also four *fia* who come from the commoners. They were all old men and constituted, so to speak, a council of elders. A special type of official called the *kai*, of which there were five kinds, surveyed the day-labourers' work and were thus a sort of foremen. After these in rank were a host of "feast notables". They were middle-aged men who had the places of honour at feasts and ceremonies. They are called *cuong* and there are no less than thirteen types. The so-called *kuang*, of which there are an equal number, have the same function but are considered to be of lower rank. Besides these there was a chief of the *muong's* police (*kuang tien*) who had under him eight policemen or soldiers (*kuan bék*). Furthermore each *muong* had its herald, sometimes more than one. There were two in *Muong Teng*. They are called *nam pong*. In the villages there were likewise heralds, called *ca*. Besides all these officials there were a number of medicine men or "illness shamans" but they had no special rank.

The land within a *muong* was communal and could not be owned by any private person, it could neither be inherited, sold nor bought. The irrigable land was regarded as the most valuable and from a theoretical point of view it should be divided amongst the different families according to their needs.

The non-irrigable land, on the other hand, was regarded as commons where any one could make a swidden. The distribution of the irrigable land is made by one of the officials in the village. If it is in a village where the chief of the muong resides, it is he that deals with the matter. In other valleys it is dealt with by the highest local officials. The ordinary people, the commoners, must pay for every unit of irrigable land that is allotted them by working for so many days for one of the higher officials. Those who held the highest titles did not cultivate the ground themselves but were allotted a certain number of families from the tax-paying commoners. Thus *tri chau* and *céng tong* each had twelve families allotted to them. The lower nobility had fewer. *Fia di* had six families and *fia fo* had three. The four highest notables had one family each. The nearest in rank after these apparently had no families as day-labourers but on the other hand they were exempt from having to perform day-labouring. This applied all the way down the scale of ranks to and including the village chief. The deputy village chief, however, had to do day-labouring. The priesthood were also exempt from day-labouring as also were the council of elders who were old men and unable to do such work. The so-called *kai*, foremen of the day-labourers, did not have to do day-labouring as they themselves led the work. The police and heralds were also exempt from day-labouring. The others who were not real officials but some sort of feast notables of higher or lower rank had to do day-labouring like the common people.

If a man did not wish to do any day-labouring he was not allotted any irrigable land and thus had to make swiddens in the commons of the muong. If a man was so energetic that he cleared land so that it was possible to irrigate it, he could keep this for a year tax-free but at the end of that year the land was taken over by the commune and distributed, unless he could pay the rent for this land in the form of day-labouring. If a man wished to leave the muong he belonged to for some reason, he could do so but then he had to pay a high entrance fee to the muong into which he moved.

According to the reports of my informants the idea was that the irrigable land should be distributed every year, but many families held the same piece of land for several years if it was considered suitable. Whether the highest officials got the best pieces of land I am not able to say, as I did not investigate this matter more closely.

The higher officials receive taxes in kind, in the form of buffaloes and pigs, and if a commoner has killed a deer or a stag he must give a thigh of this to one of the noble officials. These also have their houses built free by the day-labourers. There is an enormous difference between the small huts of the common people and the large houses of the nobility. There are no communal buildings and for festivities and such-like they gather in the large houses of the higher officials. Travelling strangers are also received there and put up for the night.

Houses, domestic animals and all tools are private property. By rearing

pigs, horses, buffaloes, etc., a Tai can thus earn some money, as well as by rearing silk-worms. Handicrafts also play a certain rôle in some villages. Certain villages specialize in pottery and sell their products over a wide area. Others are skilled weavers — nearly all the Black Tai are. Very intricately ornamented cotton and silk materials are produced in most of their villages. The art of weaving is of a high order and the making of patterns is greatly developed. I have seen, to mention one example, ornamented cotton cloth with a brocade pattern in indigo-coloured cotton on a white background, a type that is very common in the Tai district, and where the pattern is repeated along the whole length of the cloth roughly like the pattern on a wall-paper. I have seen patterns nearly two metres in length. These are constructed in such a way that the basic pattern is only half of the total pattern, the other half being its mirror image. In any case, to produce such a large pattern shows a considerable skill in weaving. These cloths are produced in draw looms.

Specialization of handicrafts is not an individual matter but is distributed amongst the various villages so that everyone in the same village has the same craft. I have seen the same thing among the North Laotians. The so-called Tai P'ouen, who come from the Tran-Ninh plateau, seem to be wholly specialized in forging iron. Their villages are to be found well outside their real domain, right up in North Thailand, and on caravan routes and rivers it is not uncommon to meet P'ouen travelling to sell their wares.

An exception to this rule seems to be the silversmiths and goldsmiths who can be found singly in different villages.

The Black Tai are not Buddhists like most of the other Tai peoples I met. This means that a study of them is considerably more valuable as they lack this influence, though they have undoubtedly been influenced from India to some extent. They have their own script, which like the writing of the other Tai tribes can be derived from an Indian alphabet and they also have myths and stories, some of which may have arisen through Indian influence. Maspero has, however, dealt with the religion of the Black Tai in a number of articles and so I do not propose to go into this matter.⁸⁾ I will restrict myself to giving some information concerning the Dien-Bien-Phu district, in particular that relating to the sacrifice to *phi muong*, the spirit of the district. This is a feast which takes place just before the transplanting of the rice, as with most of the Tai peoples I know. Unfortunately I have not taken part in this feast myself but I have the prayers of this ceremony recorded in Tai; I have not, however, completely succeeded in translating them. The meaning of the prayers is relatively clear and a summary of the contents will therefore suffice.

⁸⁾ H. Maspero: *Légendes mythologiques dans le Chou King*. (Journal Asiatique, 1924.) H. Maspero: *La société et la religion des Chinois anciens et celles des Tai modernes*. (Les religions chinoises, Mém. posthumes, vol. I. Paris 1950.) H. Maspero: *Les coutumes funéraires chez les Tai noirs du Haut-Tonkin*. *Ibid.*

The prayer to the *phi muong* consists of twenty-two sections, the first few containing a request for the protection of the spirit of the sky regarding the fertility of the ground. It then goes on with an invitation not only to the spirit of the sky, but also to the five gods of the skies and also to the spirit of the water. Then follow several prayers to other spirits, which mainly consist of the names of deceased high officials from the nobility. Some of the spirits enumerated represent different natural phenomena in the district of Muong Teng — spirits of different hills and mountains in the surrounding district and spirits found along the boundaries to other muong. There are spirits that live in a deep part of the river, where every year two buffaloes are sacrificed⁹ at the feast of *phi muong*. In Laotian times, when the Lao were in control of the country, there was a Buddhist temple here and ten kilometres from Dien-Bien-Phu there are some stones left of this temple. These too have their spirits and are included in the incantation. The hills round this old temple site also have their spirits. The main part of this prayer is an enumeration of the spirits of deceased high officials. I do not know whether this is a sort of genealogy or not, as I was unable to check this. In the latter part of the incantation are listed animals and plants and in particular certain dragons which guard the whole area and especially the border between Muong Teng and Sop Ngao, the two most important muong in this district. Generally speaking, every remarkable tree, every mountain top, every remarkable rock, every mouth of a brook or river has its own spirit which is named and invited to the great sacrifice. Not until in the fourteenth verse there appears a prayer to *le génie tutélaire* of the district, the guardian spirit of the district. It was he who first started to clear the district and who founded the first village. He is thought to live in a mountain northeast of Dien-Bien-Phu, and he is one of the most important spirits here.

It is, in other words, the sacral topography of the muong that is accounted for. This prayer to the *phi muong* is directed partly to the sky with its hierarchy of spirits, partly to those who govern the muong's — districts' — sacral geography and finally the founder of the village at the head of the other important deceased potentates in the history or mythology of the area.

I do not propose to expatiate on the various themes which occur in the prayer; I shall only point out certain traits which should be investigated and commented on in future.

Much too little is known about what I would term "sacral topography", which certainly is of the greatest interest. For one thing, it can give an insight into the nature lore of the Tai, which in its turn could explain some things in the ritual action. Sometimes in ethnography one makes an analysis of a house and its parts and looks at it in relation to cosmology and to the society as a whole and in the same way one does this with the organization of the whole village.⁹) Therefore I suppose it would also be instructive if the closed

⁹) See, R. A. Stein, note 18 below.

administrative district were to be analysed in a similar way. In China this has had a certain importance in geomancy where the conception of the landscape and its details are important. Every more or less public building such as a temple, palace, etc. was not planned nor placed in the landscape haphazardly but after certain rules of a magical nature.

In China in recent times and also amongst the Viet-Nameese geomancy has had added importance by using the compass. This division according to the compass points and other categories, when building a house, reaches far back in time; it is only during the last few centuries that it has developed into a kind of "science" or school systematized by Chinese scholars.¹⁰⁾ The village and the district often mirror their view of life and social structure.

The founder of the village is a concept which is very important in East Asia, appearing in Ancient China but also amongst many different peoples south of China.¹¹⁾ This would also be an interesting field to investigate.

Ch'en Han-Seng in his paper on Frontier Land Systems in China treats of the Lu people in S. W. Yunnan, in the area around Cheli.¹²⁾ Like the Black Tai they also had a federation of twelve states called Sipp song panna, i.e. the twelve districts. *Na* means rice field in Tai but the word *panna*, which is an old administrative unit, is probably equivalent to *chau*¹³⁾ Two of these states lie in Laotian territory while the others are in China.

According to Ch'en they lived in relative isolation from the Chinese, who first came into contact with them during the 14th century. "Closer relation between the two began only during the Ming dynasty." He regards them, moreover, as the least sinified, showing minimum evidence of Chinese political and social influence. They certainly were conquered, incorporated and had to pay tribute to the Mongols during the 13th century, when all Yunnan was incorporated with China. Despite this and the changes during the Ming era no essential changes were made in the old land system. Ch'en thus considers that "the original land system is still intact here. Chinese conquest, as far as the land west of the Mekong is concerned, is as yet incomplete."¹⁴⁾

The only thing influenced was the court of the Tai king which at the time of Ch'en's investigation (1940) consisted of two hundred and five officials divided into five ranks, apparently a close imitation of a feudalistic organization, probably of the Chinese Ming dynasty.¹⁵⁾

Next to the king, whose title is *Zao-pillin* and who was living then in Xieng-hung, were four officials or ministers. There were eight in the second rank,

¹⁰⁾ Pierre Huard et Maurice Durand: *Connaissance du Viêt-Nam*. Paris 1954. P. 70 *seq.*

¹¹⁾ Bernhard Karlgren: *The book of Odes*. Ode 250. Stockholm 1950.

¹²⁾ Ch'en Han-Seng: *Frontier Land Systems in Southernmost China*. (Institute of Pacific Relations, New York 1949.)

¹³⁾ *Op. cit.*, p. 4. Compare: Jean Rispaud: *Les noms à éléments numériques des principautés Tai*. (The Journal of the Siam Society. Bangkok 1937.)

¹⁴⁾ Ch'en, *op. cit.*, p. 15.

¹⁵⁾ Ch'en, *op. cit.*, pp. 16 and 32.

sixteen in the third, eighteen in the fourth, and nine in the fifth rank. There were also one hundred and fifty pages. Down to the fifth rank they were all paid in land holdings.

Besides this there were five classes of Muong chiefs.

Apart from this superstructure we have an old feudal system. Within this the officials were paid by having the right to permanently utilize certain pieces of land. These were also inheritable. No private land really existed. That the land was communal in the olden days is indicated, according to Ch'en, by 1) common and collective ownership of land, fish ponds and of wood and forests, 2) collective labour directed to cultivation, hunting, fishing, lumbering, 3) corporate nature of the village in such matters as tribute payment and land tenancy.

In most villages the communal land of the village is redistributed each year by the village officers for cultivation, usually carried out according to households.

In certain villages one cultivates rice on dry land and there is no rent exacted from this land.

The land assigned to the officials as salary requires labour rent, i.e. the land requires cultivation by the villagers and all the harvest is taken by the official. Alternatively the rent can be paid in produce, being a portion of the whole harvest, but cultivation is distributed among a number of households. In the former case the village itself is a tenant, while in the latter not all villagers are tenants. In the latter case the land is cultivated by the entire village's labour power.

New cultivation can be started by anyone and for this no tribute is exacted for the first five years. But the cultivator has no rights of ownership over this land, only rights of use.

There was furthermore a group of officials in Cheli who were not commoners, i.e. they were exempt from paying tax. These are "elected and hereditary officials and their relatives".

This organization has many parallels with that of the Black Tai, and it would be interesting to compare it with that of other Tai peoples.

Without going into details it is easy to see the similarities between Maspero's notes on the eastern Black Tai, my own notes and Ch'en's valuable information on the Lu in Sippsong panna within China. They obviously belong to the same form of organization. But according to Ch'en this feudal organization, at least all its court officials, was strongly influenced by the Chinese Imperial Court of the Ming dynasty.

There remains to describe the muong organization. A muong is a closed bounded area, governed partly by a temporal noble with all his officials and partly by spiritual potentates such as the phi-muong, i.e. the spirit of the area who governs it, together with a lot of other spirits representing special units in the muong's sacral topography. These are the units that are named in the prayer to the phi-muong. Added to these are the spirit of the village

founder and the spirits of important deceased feudal nobles. Above all there is the spirit of the skies together with the special spirits. The muong is thus ruled by a high feudal lord and his functionaries and the land is owned by the feudal lord and the right of use (*usufruct*) is divided among the officials as salary. Those who are not officials, on the other hand, must pay tax.

We know nothing about the kinship relations between the officials and the feudal lord of the muong, but Ch'en mentions that the highest officials belong to the lord's family or are married into it.

Unfortunately we know far too little about the family structure of the different Tai tribes and its relationship with the political structure. Most of the Tai people appear to have an ambilineal structure, and one would like to know whether the central lineage group could be the one from which the chief of the muong was taken and whether the nobility belonged to his family or kin. All these things are far from having been satisfactorily analysed.

In this connection the question may be raised whether the Tai organization and the Tai customs as a whole are Chinese. It is not uncommon to find that some authors simply refer certain things which are found among the southern Chinese people to China at large. Maspero¹⁶) certainly does not, but he points to obvious similarities between the Black Tai on the one hand and the data in ancient Chinese writings and documents on the other. Karlgren has, however, in his paper "Legends and Cults in Ancient China", given a critical survey of the documents concerning this period and shown that these similarities may be assigned to the latter part of the Chou dynasty.¹⁷) During that time, but mainly in the Han dynasty, the Chinese had pushed southward and come into contact with the non-Chinese tribes in the Ch'u kingdom. There may therefore very well have been an influence from the southern peoples.

Revaluations have to be made, using the critically studied ancient Chinese text material as a starting point. It is not my intention to carry them out here; I only wish to point out certain facts in this connection.

R. A. Stein has written two very interesting articles in which he has investigated the relation between cosmology and the architecture of the Chinese house.¹⁸) When he compares the details of the house, he keeps almost exclusively to the types of house found in North and Central Asia. He admits that he has not attempted any comparison with types further to the South. I hardly think that it is possible to prove any similarities with houses in these latter parts. The houses which show a resemblance to the ancient Chinese ones are thus mostly of an Arctic type. Stein maintains that there is also a resemblance between certain kinds of Chinese and North Asiatic shamanism. This would

¹⁶) H. Maspero, *Légendes, op. cit.*

¹⁷) Bernhard Karlgren: *Legends and Cults in Ancient China*. (The Museum of Far Eastern Antiquities, Bull. No. 18, Stockholm 1946. Pp. 349 *seq.*)

¹⁸) R. A. Stein: *L'habitat, le monde et le corps humain en Extrême-Orient et en Haute-Asie*. (Journal Asiatique, vol. 245. Paris, 1957.) R. A. Stein: *Architecture et pensée religieuse en Extrême-Orient*. (Arts Asiatiques, vol. 4. Paris 1957.)

imply that the oldest North Chinese culture is based upon an Arctic foundation. One may thus presume that when agriculture was first introduced in Northern China it occurred on an Arctic cultural basis. This primarily concerned the cultivation of various types of millet. Rice was hardly cultivated in this area, to judge from ancient Chinese documents.¹⁹⁾ It must not be forgotten that in this area there was a rich supply of edible plants to add to the food supply, besides an ample amount of game.²⁰⁾ Without doubt it was possible to support a large number of people on the fertile Chinese loess soil even with a relatively primitive method of agriculture.

In his book on fishing equipment in the South Seas B. Anell concludes: "One of the most interesting results of this study is the fact that the typical Melanesian fishing implements belong to the South Asiatic culture sphere of which Melanesia seems to constitute an easterly outpost. The implements typical of Polynesia and Micronesia, on the other hand, belong to the North-Eurasian fishing culture, except in those cases where they have a pure inter-Oceanic distribution. the Polynesian fishing implements have their closest parallels in north-eastern Asia, above all in Japan. Neolithic Japan seems to have constituted a south-eastern outpost of the widely diffused northern Eurasian fishing culture."²¹⁾

But at the same time the Polynesians cultivated different kinds of yams and taro, which cannot grow in Northern China but only in tropical parts. The northern limit for their cultivation area stretches a good deal south of the Yangtse river but comes further north along the coast.²²⁾ How they came to Polynesia and which way they came is still a problem. Did the Polynesians come from an area on the mainland where they both grew these tropical plants and at the same time used sub-arctic fishing equipment? As yet there is no answer to this question. What we can suppose is that both yams and taro could have been grown in the south before rice was cultivated in earnest. Hence, when the growing of rice began, the limits of cultivation could be extended considerably further north until it met the area of cultivation of the northern kinds of millet. It is quite possible that this extended area was formerly occupied for a long time by people who mainly lived by hunting and fishing. Much of this argument depends on chronology, and Chinese archaeology is not yet far enough advanced for any conclusions to be reached. In the north agriculture was probably fully developed during the Yangshao period,²³⁾ but unfortunately the archaeology of the southern districts is not

¹⁹⁾ Maspero, *La société et la religion*, *op. cit.*, P. 145.

²⁰⁾ André G. Haudricourt et Louis Hédin: *L'Homme et les plantes cultivées*. (Paris 1943. P. 149 *seq.*)

²¹⁾ Bengt Anell: *Contribution to the history of fishing in the Southern Seas*. (Studia Ethnographica Upsaliensia IX. Uppsala 1955.)

²²⁾ I. H. Burkill, personal letter. Cf. Burkill. *The rise and decline of the greater yam in the service of man*. (The Advancement of Science, vol. VII, No. 28. London 1951.)

²³⁾ Chêng Tê-K'un: *Archaeology in China*. (Prehistoric China, vol. I. Cambridge 1959. E.g. p. 69.)

sufficiently advanced to supply any dating. According to the Russian investigator Vasiljeff, rice was probably first grown about the middle of the first millennium B.C. and was probably the very plant which united the two areas.²⁴⁾

Even if much of this is speculation one can, however, assume that there have been two separate and original areas of cultivation — one mainly millet-growing in the north built on an Arctic basis and another one based on yams and taro in the south. In both these areas there were quite good means of supporting a large number of people in limited districts. Thus it is not unreasonable to suppose that a feudal organization was possible in both places. Thus it is not so self-evident that the feudal organization of the Tai peoples is just an imitation of the North Chinese. It is difficult to compare these two, as one of them lives right up in the north and the other in the southernmost part of China. There is moreover a difference in time of about three thousand years in this comparison.

What I have pointed out may be regarded as a working hypothesis. We can suppose that the two cultivation areas were relatively independent of each other in the beginning; they first came into contact with each other later, either when the cultivation of rice was brought northwards or when the North Chinese pushed south. When they came into contact, one must not only assume that it was the Chinese who were the givers and the southern peoples the receivers. It is quite likely that the synthesis is not only in the sum of these two cultures but also something additional — a common result of such a fusion.

It is possible to find institutions and customs in southernmost China which do not occur in the north. Such things as ball games, tug-of-war and also the dragon boat festivals may be regarded as examples of a purely Southern nature. Ritual dances and competitive games between two opposing teams occur mainly in South China and still further south in Further India and Indonesia.

It might be interesting to investigate this tug-of-war motif in relation to the Spring festivals among the Tai people which often take place in caves.²⁵⁾ The tug-of-war between men and women has often been regarded as having a connection with fertility and would thus be a kind of phallus cult. This is possible, but for my part I prefer to think that the rope in the tug-of-war in some way represents a dragon or has to do with the dragon cult. Are the caves the dragon's dwellings? This monster is the symbol of rain, and hence also fertility, it is the women's task to pull out this dragon so that agriculture can begin. The rain time is also governed by *yin*, the female principle.

Frogs are likewise connected with rain, if we dare point to certain customs amongst the Viet-Nameese in which certain rites take place in caves in order

²⁴⁾ L. S. Vasiljeff, under *Miscellanea* in *Anthropos*, vol. 56, 1961, p. 288—289, and *Chêng Tê-K'un*, *Archaeology in China*, vol. II, *Shang China*, Cambridge 1960, p. 197.

²⁵⁾ Léopold Cadière: *Croyances et pratiques religieuses des Vietnamiens*. Vol. II, p. 269. Saigon 1954.

to produce rain.²⁶⁾ I do not intend to investigate this problem here but only to suggest some possibilities to those who are interested in taking them up for further research. It might be of interest to place the ball game and the dragon boat festivals in a social setting. The same might be attempted with many other customs showing the particular characteristics of the Southern Chinese or rather South East Asian cultures, which so far have received all too little attention from ethnographers. Just as well as one can show similarities between North and South China, I feel that it would be of value to investigate the differences between these areas, above all their social organization.

This does not mean that great similarities do not exist. Maspero mentions in his paper on legends and myths in the Chou dynasty that certain Chinese clan names and heroes were adopted by the barbarian kings in the neighbourhood.²⁷⁾ This is obviously an imitation of an organization which is considered to have a higher status, a phenomenon analogous to the Tai tribes' imitation of the court of the Ming emperor. A similar process may be observed in the highlands of Burma amongst the Kachin, where the feudal organization of the Shan princes was imitated by a people whose social structure is unilinear and democratic. There has arisen a new product, *gumsa*, between the old *gumlao* society and the Shan feudal structure, a fact elegantly demonstrated by Leach.²⁸⁾ A similar process occurs in many other places where two different types of society come into contact, not least in the Africa of to-day.²⁹⁾

It is surely possible to trace other similarities or certain features possessed in common in North and South China, however these may have to be explained. One example is the theme of the *village founder* which occurs over large parts of East Asia. But this is not something to be explained by diffusionism, but a phenomenon to be investigated by modern structural methods. Amongst the Black Tai special sacrifices and prayers are made to the village founder and this idea is common amongst many different tribes in South East Asia.

In any case, we are undoubtedly dealing with two different cultural areas in China, and strictly speaking this is not very remarkable since this difference is dependent on the geography and exists even to day. If one wants to understand the Chinese society in its many aspects one must not limit oneself to Northern China and the oldest documents, since in the various epochs of China's history (what we now mean by China) the diverse areas have in turn influenced the development of this remarkable and many-faceted Chinese civilization.

In order to understand this, it is absolutely necessary to take into consideration the whole of South China, not only the Chinese element in its population but also the non-Chinese minorities. Unfortunately these peoples are all too little known. Field work according to modern methods has been scarce.

²⁶⁾ Maspero, *Légendes*, *op. cit.*, p. 78 *seq.*, p. 82 *seq.*

²⁷⁾ E. R. Leach: *Political Systems of Highland Burma*. (London 1954.)

²⁸⁾ *Op. cit.*

²⁹⁾ A. Southall: *Social Change in Modern Africa*. (London 1961.)

There is a great task here awaiting modern ethnography. To begin with one could collect all the material available into a handbook, from both Chinese and European sources. With such material as a starting point it would be possible to make some progress. Such a handbook demands cooperation, not only from the Chinese ethnographers but from all ethnographers interested in this area — a work passing the borders of nationalities. It cannot be denied that we do need a reference book for this area on the same lines as the one which is now under publication about Africa, *Ethnographic Survey of Africa*, or that published about South America, *Handbook of South American Indians*. This would to a great extent further the studies of South China and neighbouring areas and above all it would be of great help to all those who are interested in the Far Eastern cultures and their various manifestations. What is mainly needed, however, is field work with modern ethnographical methods.

Above all, this would elucidate important social relationships by placing the different concepts into the social system. We would then not have to attempt the establishment, as in the present paper, of a regional division on very vague grounds. Even if they are based on hypotheses, however, such regional divisions have necessarily to be surmised, at the outset in order to find out which ways research has to be directed.

GEOGRAPHICAL ASPECTS OF THE SILK ROAD ESPECIALLY IN PERSIA AND EAST TURKESTAN

BY

BERTIL ALMGREN

Spanning almost one-fifth of the globe, the caravan road from China to the Mediterranean — the Silk Road — was one of the Old World's longest trade routes and by no means the least important. Its length of about 5,000 miles or 8,000 kilometres might be compared with the distance from Stockholm to Alaska (or to use the words of an 18th century Swedish poet "from Novaya Zemlya to Ceylon").

There seems to be agreement as to the general route of the Silk Road through Persia. Most authors describe it, with the aid of Chinese records (Hirth 1885, Herrmann 1910, 1938) or Roman itineraries, *inter alia* the map of the Tabula Peuteringiana (Miller 1916), as leading from Merv (Antiochia Margiana) in West Turkestan, through Ray (Rhaga, just south-east of present Teheran, with one of the finest springs of Persia, where Alexander stayed on his way eastwards and Harun-al-Rashid was born), via the old Median capital of Ekbatana (the present Hamadan), to Seleukia on the Tigris and finally to Antioch with its harbours on the Mediterranean, or to Tyrus and Beyrut. But the details remain slightly obscure, such as, for instance, the exact position of Hekatompylos, the late Achemenid and Parthian city, somewhere between Ray and Merv.

From the map we would have reason to think that this journey over the Iranian highlands, bordered by the Zagros and Elburz ranges, was one of the most difficult passages of the Silk Road, covering not less than a thousand miles. It would therefore seem to be of some interest to look closer at the geographical conditions, in order to find out what these can tell us about the exact location of certain parts of the Silk Road.

East of Ray the choice of route would seem very free over the high plateau, but it is astonishingly limited. The Silk Road is confined to a more or less narrow strip between the southern slopes of the Elburz and the desert, the rightly feared Dasht-i-Kavir, a salt desert, which still today takes its toll of lives. This does not mean that the caravan route leads through sand dunes or over salt crusts. Between the foot of the Elburz, with its fringe of arable fields which owe their existence to more or less scanty ground water from the mountains, on the one side, and the desert, on the other, there is a belt of semi-arid steppe — "some strip of herbage strown that just divides the desert and the sown" as that great authority on the Near East, Gertrude

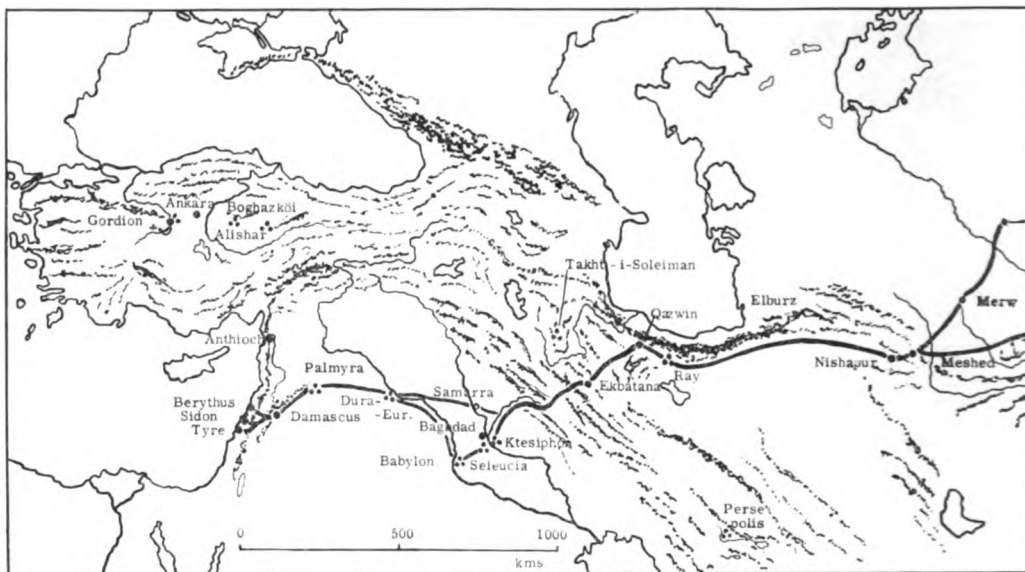


Fig. 1 a.

Bell, said, quoting the Persian poet Omar Khayam. This belt of steppe, however, not only stretches from Ray further east into Khorassan but is also to be found to the west of Ray, where, south of the Elburz, the desert gives way to parallel ranges, stretching north-west and south-east like fingers from the highland of Azerbaijan towards the open flats of the salt deserts of central Iran.

These ranges frame the open, broad and mostly very flat valleys of Media (Pl. 1 a). There we find a road terrain, somewhat similar in appearance to that to the east of Ray but for different reasons. The ground water that creates the arable land and decides the extent of cultivation, is practically never abundant enough to supply the whole valley, and the fields are completely dependent upon this for the almost rainless period from April to October. They become more and more scarce, the further away from the mountains. To some extent they are helped by the famous *qanats*, those subterranean channels with their typical, crater-like inspection openings at short intervals, which try, although sometimes in vain, to stretch the supply of ground water as far as possible into the fertile valley. Finally, however, the ground consists of deserted fields or pure steppe. Only at the bottom of the valley, in the slopes along the river (more or less dry in the summer) are there fields once more. Thus the typical, straight parallel valleys of Media, south of the western Elburz, all contain a broad or narrow belt of steppe, running in the same direction as the mountain ranges, which over great parts of western Persia are astonishingly regular in their orientation west-north-west and east-south-east. That this is excellent terrain for a road is proved, not only by the location here of the present main road, but also by the fact that one can just as often leave this main road and drive the car

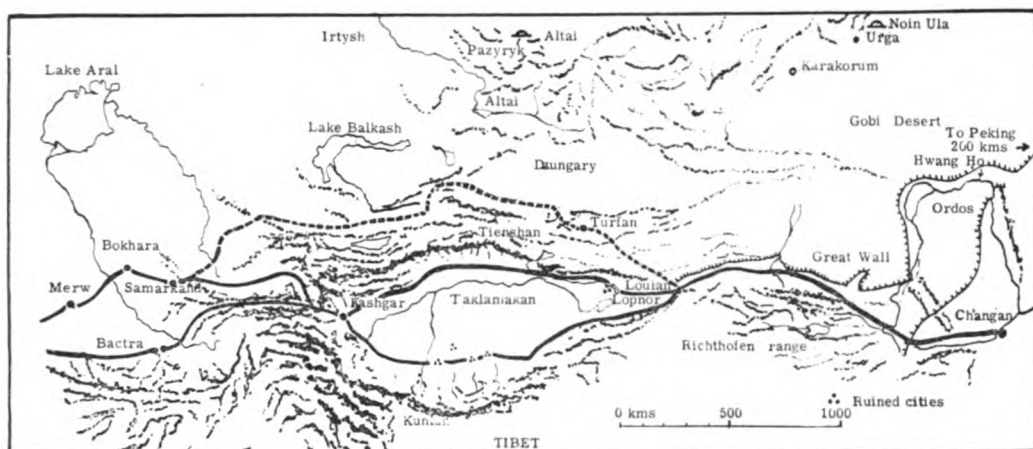


Fig. 1 b.

alongside it, on virgin soil, where the last camel caravans or the droves of cattle still make their way (Pl. 1 b).

An important reason for this is the geological situation. Thick deposits of gravel have collected in the valleys along the mountain slopes and especially along the Elburz, which, as the highest and northernmost range in Persia, has a large amount of precipitation, and naturally more so during the pluvial ages corresponding to the glacial ages in other regions. Torrents spread this gravel more or less evenly over the valleys. Then the shallow bowl of the Iranian highlands was filled with lakes, at least during parts of the pluvial ages, and these lakes at times deposited clay on top of the gravel. Thus there is a hard crust of clay, forming an excellent road surface, on top of the well-drained gravel. Few roads could have a better foundation and this is ideal terrain for the Silk Road.

But it is not only the general surface that is excellent. The débris filling the valleys has, for the above-mentioned reasons, and ultimately because of the clay deposited on the bottom of a shallow lake, attained such a degree of horizontal evenness that, for hundreds of miles, the road does not have to cope with any significant or even discernible differences in level, in the main direction of the valley. Thus this steppe area or belt forms an ideally flat and ideally surfaced caravan road, leading for about a thousand kilometres in almost exactly the right east-west direction.

To this must be added the advantage of the steppe flora: there is enough for camel fodder, but not enough to be of any vital interest to the local inhabitants. Quite naturally, the hamlets of the latter are situated at the foot of the mountains, by the wells and among the fields, and not in the steppe zone of the valley, where the road runs. Thus the inhabitants have little interest in interfering with the international trade, with the comings and goings of caravans and, as their fields are far from the road, the farmers do not need to tell these caravans not to pass through their crops, as would have been the case e. g. among the rich rice fields of the densely cultivated

province of Mazanderan, north of the Elburz. This must be one of the reasons why the Silk Road did not run along the southern shore of the Caspian. Instead, south of the Elburz, it stretches openly and without any serious natural hindrance for over a thousand kilometres from Merv to Qaswin, and onwards to Ekbatana-Hamadan.

It is, however, not only open. A route across the steppes would sometimes create difficulties in finding the road, but not in this case. The exact situation of the road, a little way from the Elburz range (Pl. 1 b), makes the latter easy to watch all the time, as it is not screened by more or less complicated foot hills and so constitutes an excellent road mark: as long as the Elburz is on your left at some distance, after reaching the late medieval capital of Qazwin, you will be on the right road to China for wellnigh the next thousand kilometres or so.

It is possible to state that, when covering this distance, the Silk Road does not meet any serious obstacles, either in the shape of steep mountains with difficult passes, easily blocked, or bad road conditions slowing down the pace of the caravan, torrential rivers necessitating toll bridges (except at Qazwin, and there the river is easily negotiated in summer and autumn owing to the low water level) or in the shape of dense woods or even scrub suitable for ambushes, or vast deserts with few waterholes.

It may be interesting to compare this result with the rest of the route across Asia (cf the map, fig. 1). If, for a starting point, we choose the bend in the Hwang-ho river, south-west of the Ordos desert, where obviously different tracks from different parts of China must have met, confined between the Great Wall and the eastern end of the Richthofen range that forms the north-eastern barrier of the Tibetan plateau, the Silk Road is easily traceable between that range and the westernmost part of the Great Wall, whose extension for another 600 kilometres to the west can have had but one purpose: to protect the Silk Road along the Richthofen range. As this runs east-south-east and west-north-west in exactly the necessary direction, the situation is very much the same as in Persia, and the detail landscape between mountain range and desert will be mainly the same.

After the termination of the Great Wall, a Han-dynasty wall offers shelter to the north for another 400 kilometres for a road gradually deviating from the foothills of the Richthofen and Nanshan ranges, in a landscape changing into desert, which has to be crossed for a distance of about 600 kilometres, passing to the north of Lake Lop-nor and through the deserted town of Lou-lan.

After Lou-lan, however, the Qum darja river and, north of this, the parallel mountain range of Quruq-tagh again seem to offer some guidance, when choosing the northern route through East Turkestan. Running north of the desert of Takla-Makan, and south of the Tien Shan range, the Silk Road again shows definite affinities with its Persian sector, all the way — about one thousand kilometres — to Kashgar (cf. below). After crossing the Pamir west of that city, there is again steppe country with some patches of desert on the Samarkand-Merv route, where the Persian sector begins. After passing to Hamadan, as described above, the road with some deviations, due to the not too abundant openings in the extremely regular, parallel, Zagros ranges, running west-north-west and east-south-east, reaches, via

“the Gate of Asia” (Behistun and Sar-i-Pul with royal rock reliefs) the Mesopotamian plain. Crossing the Tigris at one of the great cities of the periods concerned — Seleukia, Ctesiphon, Samarra or Baghdad — whose importance was not least due to the Silk Road, and again over the Euphrates at one of the points where it is closest to the Tigris, the route can again follow the steppe zone between the desert and the sown to a point where, as at Dura-Europus, the semi-arid steppe, verging on desert, offers a short crossing via Palmyra to Damascus, from whence old roads must have led down between Anti Lebanon and Lebanon through the open Bekka valley across Lebanon to Beyrut or via smaller valleys in the rather low southern outcrops of Lebanon to Sidon and Tyre. A more northerly route across from the Euphrates to Aleppo and Antioch seems to offer even less cultivated land to cross and even more steppe.

Thus, the Silk Road enjoys the same geographical conditions almost without interruption from the Hwang-ho river to the Mediterranean, running on steppe, sometimes semi-arid and in parts substituted by not too wide patches of desert, and with astonishingly few other natural obstacles on this ideal, camel-caravan, trans-continental route, from one end to the other, a distance of more than 5,000 miles (8,000 kilometres)! And for the greater part of this distance it is running along E—W mountain ranges, giving easy indication of the true direction.

Another remarkable fact is that this route has such relatively few deviations from the shortest possible one, because, although it seems to curve a lot towards the north, in reality it corresponds closely to the great circle that is the geometrical expression of the shortest distance on the globe between two points in the northern hemisphere.

It has, however, one weak point. The passes across the Pamir are very high indeed, and these difficult passages, vividly described by Sven Hedin in his work “Genom Khorassan och Turkestan” 1892, could easily be cut off by military force by anyone who happened to control the region.

Undoubtedly the Chinese were striving to get political control of the East Turkestan routes and of the Pamir passes. During the Han period they seem to have managed to do so, more or less, and thus mastered the first half of the Silk Road proper. The northern branch seems to have been well protected by the Tien Shan range to the north of it and the Takla Makan desert to the south (and for that matter from cavalry attacks from the south by the Tarim river). Before passing the desert at Lop-nor and Lou-lan, the extremely extensive defence walls of the Han period offered a similar protection towards the north for more than a thousand kilometres even west of the Hwang-ho. These great walls stress the importance of the route to the Chinese, who also described it in several works (Hirth 1885, Herrmann 1910, 1931). Lou-lan and other deserted towns along the road also belong to the Han period. But if such great attention was paid to this part of the Silk Road during the Han period (206 B.C. — 221 A.D.), why is there no definite proof of this route being used much earlier?

We may just as well put this question the other way. Was it, as a matter of fact, possible to use this route much earlier? Were the passes over the Pamir, attaining a height above sea level of no less than 3,700 metres (13,000 feet) not liable to be

blocked for indefinite periods by snow and ice? If we examine Hedin's description (1892, p. 401 ff), we must admit that this is the case. And all the more so, if there happened to be a small change for the worse in the climate, resulting in colder and wetter weather.

Now it has been well known since Sernander 1908, that such a climatic change did take place in northern and central Europe at or shortly before the middle of the last millenium B.C. This does not prove that a similar deterioration took place in central Asia, but we must admit the possibility of climatic changes there also. (In a recent discussion turning on the often-propagated theory of the desiccation of the Old World since the Glacial Age, Monod still admits the possibility of such fluctuations, the character of which would correspond to the greater changes that constitute the rythm of the preceding Quaternary Glacial/Pluvial Ages, 1961, p. 28. This discussion was started by Huntington with his "The pulse of Asia" in 1907, cp his article of 1935. In recent works, i.a. 1953, 1958, Bobek as an expert on Iranian geography has stated that there are no conclusive proofs of a definite change of climate in Iran in postglacial time, but he admits the possibility of fluctuations (verbally, Teheran 1959).

If we assume the possibility that such a climatic change could have taken place in complete analogy with that in Europe, the passes over the Pamir would certainly have been completely blocked by more or less permanent ice and snow, and thus East Turkestan would have been completely cut off from the West, and would thus have been of little importance to trans-Asian trade, which would have had to seek other routes.

The contents of the famous, deep-frozen Pazyryk graves of the Altai (5th to 4th centuries B.C.) would seem to be of some interest in this connection. There is at Pazyryk a definite Persian (late Achemenid) influence, traceable in such things as textiles (Rudenko 1953) and silver mountings (Jettmar 1951), but there is also a definite *Chinese* connection in the shape of mirrors, and of a mount with dragon figures (fig. 2; which, incidentally, if turned upside down, offer similarity with the *en face* masks on the bronzes of the Chou or Huai periods of China. For such bronzes see Karlgren 1936, 1941).

Perhaps the whole remarkable panoply of animal style in the wood, textiles and leather finds and tattooing in the Pazyryk graves can be fully explained by acknowledging not only Persian and Scythian influences, but also Chinese stylistic elements in the curiously twisted animal bodies and their repeated, evenly curved design elements, reminiscent of the curves of Huai animals and arabesques on mirror backs.

Thus the Pazyryk finds would indicate a steppe road, completely avoiding the high central-Asian mountain ranges and leading with extremely small and as a matter of fact mostly negligible differences of altitude or landscape all the way from Persia to Peking. This route would have passed the Dshungarian gates, south of the Altai (on the northern slopes of which Pazyryk is situated), and onwards over the Dshungarian steppes to the Mongolian, passing Noin Ula with its Han period grave finds, containing textile manufactures, some of which are similar to certain of the



Fig. 2. Copper plaque showing Chinese influence from Mound 2, Pazyrik. IV c. B.C. About $4\frac{1}{2} \times 3\frac{1}{2}$ in.

Pazyryk ones, and some of undoubtedly Hellenistic, perhaps Syrian origin (Ebert 1927).

As it is in this area that we find the only really difficult natural obstacle on the whole route, viz. the Gobi desert, it is possible that Noin Ula indicates a solution of this problem — having the Road north of the Gobi. This would, however, mean a serious lengthening of the journey. If (still hypothetically) the climate was just slightly wetter at that time than now, the passage from the area of Karakorum (the capital of Kublai Khan) to Peking or northern China might have been, at least partly, over arid steppes instead of the present desert. If this was the case, the earlier route of trans-Asian trade was, owing to climatic conditions, much more northerly than at later times. The two routes might, of course, join at one place or another, as seems to have been the case with the route taken by de Carpini in 1245—47, by Ruysbrook in 1253 and by Marco Polo in his journey, in 1275, which carried him north of the Tien Shan mountains, joining the other route somewhere in the Lou-lan area. In this connection it is important to note that Turfan with its Uigurian culture of the 7th to 9th centuries¹⁾ is not situated directly on the Kashgar — Lou-lan route of East Turkestan, but in a more northerly recess of the mountains, only connected with the Silk Road through a gorge some 30—40 metres wide, offering (as Professor Norin tells me) splendid opportunities for brigands. It is thus very possible that *Turfan* as a most important focus of Iranian influence and of trans-Asian trade is linked more with the *Dshungarian* branch of the Silk Road, than with the Kashgar one.

¹⁾ For Turfan, see von Le Coq, 1922—24.

Why, then, was this longer, most northerly, Dshungarian route used, both before and again *after* the Han period? Perhaps climatic conditions again played a part in barring the Pamir passes, that were the *sine qua non* of the Turkestan route? Obviously a deterioration of the climate in the sense of increased cold and precipitation would have had disastrous results in passes over 3,700 metres high. But is there any proof of such a climate change in Asia? The fact that there were such changes in Europe north of the Alps has been demonstrated by the aid of pollen analysis, but such a method is almost completely impossible to apply in the arid regions traversed by the Silk Road. (The possibility of using salt desert stratifications has been pointed out by Asklund 1935, p. 238).

It might, however, be possible to find some indications as to the climatic fluctuations in the results of the excavations at Takht-i-Soleiman in north-western Iran (Pl. 2 a), between the Hamadan branch of the Silk Road and another branch towards Constantinople, some 150 kilometres ESE of Lake Urmia. The Takht itself, a mighty fortress about 350 metres in diameter, has been the object of an excavation consisting of, *inter alia*, two large trial trenches, about 25 metres long and 5 metres wide and going down to virgin rock at a depth of 8—10 metres, without yielding anything but Islamic and Late Sassanian finds (Almgren 1961). This is very remarkable, as the centre of the fortress is occupied by a fresh-water spring lake with a constant and abundant water supply, that irrigates (Naumann 1961) the surrounding valley. Such a source of water would almost inevitably have attracted a constant settlement from earliest times in this arid landscape but only at one place in the neighbourhood are there earlier finds, viz. on the volcano-like cone of the Zindan, built up of travertine around a tremendous pipe-like hole, 120 metres deep and 80 metres in diameter. This hole, now empty, was originally filled by the hot sulphurous water that built the whole cone-shaped mountain, around the top of which the author found what turned out to be¹⁾ a most puzzling arrangement of circular walls and a large amount of course pottery, including what seem to have been heavy drainpipes (Oehler-Zachrisson 1961). The not very abundant datable material all tends to indicate a date before the middle of the last millenium B. C. (Boehmer 1961.)

One possible explanation of this arrangement is that it was connected with a geological stage in which the spring in the centre of the cone was filled with water, as is still the case at Takht-i-Soleiman. As there are similar, but very much older domed remnants of analogous geological phenomena in the immediate neighbourhood, I think we are entitled to see in these a succession of great artesian wells building up one cone or dome after the other, *when there was a more abundant flow of water*, and cementing themselves when the water vanished. The reason for this would obviously be fluctuations of climate, and it is then rather interesting to observe that the two presumed periods of abundant flow of water, viz. shortly before the middle of the last millenium B. C. and about a thousand years later, in the 4th to the 6th centuries, correspond very closely with the dates of the wetter climate in northern and central Europe that have been demonstrated by Sernander 1908 and by Gams-Nordhagen 1923, Granlund 1932 (cp Fries 1951, Lundqvist 1957).

¹⁾ During later excavations, conducted by Dr Sune Zachrisson in 1959 and by Dr H. Oehler in 1960.

Accordingly, the intermediate period would have been drier, with maximum dryness around the time of the Birth of Christ. This would have constituted the best possible period for snow-free passes over the Pamir, if the above parallelizing of climatic changes in Europe and Asia holds good. Is, then, the Han advance in East Turkestan during the centuries around the beginning of the Christian era due to this fact and to the consequent *opening of the Pamir roads*?

Here the reader will have grave suspicions of my argument. Is not this the period when cities like Lou-lan and many others which are now covered by sand dunes flourished in the middle of the desert? How could this be possible in a notoriously dry period?

There is, however, a series of geological facts, which cast an interesting light on this question. Ruined desert cities in southern East Turkestan lie on a line fairly parallel to the later road south of the Takla-Makan desert, but much further into that desert. Now, on the very high mountain ranges to the south of East Turkestan, reaching altitudes of over 6,000 metres, there are, according to Norin 1932, 1941, definite signs that the glaciers were much larger during a quite late, postglacial period and that they have since diminished again. It is possible, according to him, that this maximum size of the glaciers coincides with the climatic deterioration of the last millenium B. C. But these large glaciers would be most liable to melt again during a hot and dry period. This water runs down in fairly straight streams directly into the desert, and, owing to the large amount of water, the rivers at that time flowed farther than the present ones. Paradoxically enough, *a dry and hot climate would irrigate the Takla-Makan desert* and make it *more fertile* at least in the vicinity of the water-courses. This is a bottled-up climatic fluctuation, and thus half a millenium late! If the synchronization with the Han period is correct, this will enable us to understand the Han advance through Takla-Makan and *the foundation of the desert cities, as well as their final desertion as early as the end of that period* when the melting of the glaciers stopped.

Why then were these cities founded in the desert and not at the foot of the mountains, where most villages in Persia are situated? The reason is again geological. As in Persia there are gravel accumulations near the lower parts of the Turkestan mountains (Norin 1941). This gravel is not covered by lake clay, and furthermore, as it is often raised along with the still rising mountains in this part of Asia, the mountain streams dig down into it, creating hundreds of canyons across this gravel fringe, the so called *sai*. Thus the *sai* is neither arable land nor fit for roads. Only where the *sai* finishes, covered by clay at the edge of the present desert, is there a substratum fit both for roads and for fields, and this is where the caravan road runs today. As, however, the original desert soil of the Takla-Makan is in reality rather fertile (even where covered by later sand dunes), the countless abundant streams from the melting glaciers of a dry and hot period flowing far into the desert must have substantially augmented the arable area at that time, if only along their banks. If the clay was wholly occupied by fields, the Silk Road would probably run outside them, going from stream to stream, across rather arid steppe country outside the

really cultivated land, and thus would have given rise to the caravan towns at the extreme end of the streams, in the middle of the present desert.

This climatic fluctuation might also have had some results elsewhere. Sten Florin has argued (unfortunately only in unpublished lectures) that climatic fluctuations could be used, not only to explain cultural decline as Sernander did, but also to explain the background of, and give a reason for, the *flourishing* of a prehistoric culture. If the indications given by the excavations at Takht-i-Soleiman and the neighbouring Zindan in Persia are correctly interpreted they might lead to results which will affect the history of that country.

Persia, being located predominantly on the margin between barely arable land and desert, would, of course, benefit greatly from a rise in precipitation. But in a country like Persia such a rise would have to be very considerable, to be demonstrable geologically. In this connection there is, however, one fact that, to my knowledge, has hardly been taken into account.

In large parts of west Iran, at least (as I had the opportunity to note during a five days' reconnaissance ride on horseback — that unsurpassed medium of travel in these parts — to Takht-i-Soleiman and was later able to confirm during several flights) the mountains have one feature in common: one very rarely sees the rock, as it is almost universally covered with limey clay (Pl. 2 b). That this clay is still there and has not been substituted by bare or weathered rock must be due to precipitation in the form of snow in this high land, mostly well over 1,200 metres high. *The erosion of the winter rains in the Mediterranean lands is lacking here.* The results is, I think, an important one for Persian cultural history: every small fluctuation in the climate tending to augment the precipitation will have immediate results. The arable land will be enlarged and, above all, the pastures will multiply and will increase tenfold or even hundredfold, spreading the grass over the endless mountains, now almost barren and always treeless but in reality fertile and easily grazed.

Against this background, it seems rather remarkable that the rise and prosperous period of the Achaemenid empire should so closely coincide with the supposed period of abundant water flow in the Zindan mountain cone near Takht-i-Soleiman, and thus also with the maximum of precipitation in central and northern Europe before and around the middle of the last millenium B. C. And furthermore, about a thousand years later, the rise of the mighty Sassanian empire in that very area, at times covering large parts of the former Achaemenid kingdom, corresponds not only with the earliest date for the origin of Takht-i-Soleiman itself (if we allow for the present excavations not necessarily having yielded the earliest finds as yet) but also with the findings of geologists as to the renewed maximum precipitation in Europe north of the Alps about the 4th—6th centuries A. D. This coincidence is all the more remarkable, as the intervening (presumably dry) period of the Parthian empire had its centre, not in the arid Iranian plateau, where scarcely any important finds have been made, but in the irrigated land along the Euphrates and the Tigris (Herzfeld 1935, p. 57).

Even in regard to such a site as Persepolis, the Achaemenid royal seat from the 6th to the 4th centuries B. C., this would be of some interest. On its 'Apadana' or

artificial terrace, it has a situation similar to that of the older royal seat of Pasargadae, on a site rather odd for a palace, with its back to a hill, barely defended by a rather insignificant wall, and overlooking a completely flat and fertile plain. This plain obviously — during the Glacial Age or later — formed the bottom of a lake, that has now withdrawn to a much smaller bitter lake, lacking any outlet. But as the existence of deep wells show, there still exists ground water all over the Persepolis plain, unlike most parts of Iran (where the subterranean, *qanat* irrigation channels are proofs of the lack of ground water).

If and when the climate was wetter, it would mean that the Persepolis plain, having no outlets, would have a ground-water level much higher than now, and consequently much better conditions for vegetation, at times certainly rivalling those of the great river valleys of the Old World or the most prosperous coastal strips of the Mediterranean. It seems that the Achemenids moved their royal seat to the edge of a wonderfully rich and fertile plain, a real *paradeison*, surrounded by an almost endless region of green mountain pastures.

One cannot quite exclude the possibility that, when the earlier palace of Pasargadae, situated somewhat higher, was founded by Kyros in 559—550 B. C., the Persepolis valley was still a very shallow lake, as long as heavy rains filled the closed area with water. After the amount of precipitation started to decline, the lake slowly dried out, thus leaving a most fertile and well-watered soil for new settlements. It was then quite natural that this new palace should be built on a high terrace, as a protection against temporary inundations.

The vast empire of the Achemenids also has aspects connected with the road problems that were the starting-point of this paper. To the contemporaries of the Achemenids in Greece, the Persian roads and postal system were a source of constant admiration. Roads in the transcontinental sense hardly existed in the Greek world. The Greeks lived in their towns, surrounded by rather steep and rugged mountains (if not on islands) and never seem to have been tempted to make the inland road an important link between towns and cultures, a fact best shown by the relative unimportance of their horse-drawn transport and, above all, by their lack of cavalry. This must have had something to do with their adherence to the surprisingly small areas of their states and — from a geographical point of view — the rather provincial outlook of Greek politics.

In Asia, however, once outside the just as closely confined city states of the Ionian valleys, and across the sharp geographical and climatic border between the completely "Hellenic" lower valleys with their eroded mountains and rich red *terra rossa* fields, there are in the inland steppes of Anatolia once again *the roads that create empires*.

When Alexander the Great arrived in Gordion, he was shown the chariot in the temple of Zeus, the yoke of which was tied to the pole by means of the Gordian Knot. He who could untie this famous knot was to be the Lord of Asia. Why? Was it not because Gordion is situated at the western end of the main northern caravan route across the Anatolian steppes, which passes not only by Ankara (Anchyra of

the Romans¹), but also by Boghazköy, the Hattusa capital of the Hittites, by their important town Alishar, whose history reaches far back into Chalcolithic times (v.d. Osten 1932, 1937), and leads on past the sources of the Euphrates and the Tigris to Mesopotamia, or to Persia and to central Asia?

This was what Herodotus described (V. 16) as the Persian Royal Road to Susa, well equipped with all conveniences for wayfarers — especially the royal postmen and couriers of the Achemenids. That such a road across parts of a continent was a natural thing to the Persians, fostered in a country of almost endless natural roads, is, I think, obvious to anyone who has had the opportunity to travel in Persia. But it is also obvious that this is the prerequisite condition for lasting sovereignty and for governing an empire like the Achemenid one, the first really large empire in the world with global aspirations.

¹) Its famous inscription by the Emperor Augustus, the *Monumentum Ancyranum* may to some extent owe its presence here to the caravan road.

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PLATES

Pl. 1.

- a. The Silk Road in Media, east of Teheran. To the right the Elburz range.
- b. The age of the road is testified by a *tell*, and an Islamic grave. Note clay digging along road.
- c. In the steppe belt, the underlying gravel sometimes crops out from beneath the clay.

Pl. 2.

- a. The 11,000-feet mountain Takht-i-Bilqis, near Takht-i-Soleiman, is almost completely covered with pastures, although at present very arid.
- b. The Sassanid fortress of Takht-i-Soleiman in Azerbeidjan, with its spring lake, and, in the background, the Zindan travertine cone.



a



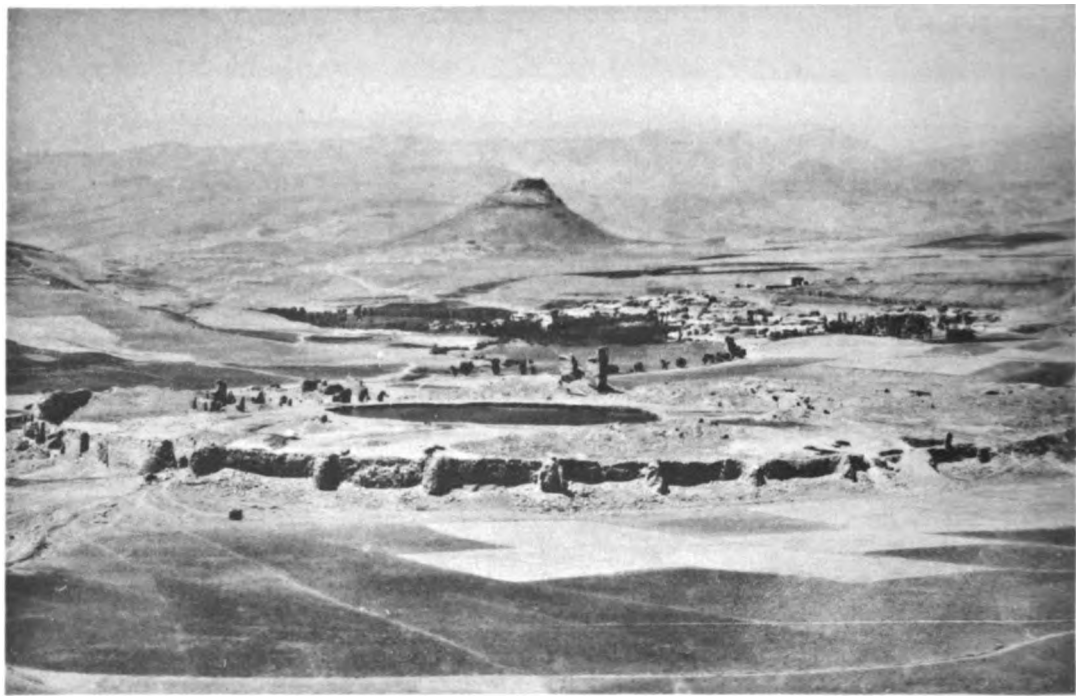
b



c



a



b

ON ARCHAIC CHINESE *ər* AND *əd*

BY

GÖRAN MALMQVIST

The aim of this paper is to establish the exact nature of the distinction between the Archaic Chinese phonological classes *ər* and *əd*.

When we examine all the occurrences of *ər*-class words as rimes in the *Shi king* we find the following distribution:

p'ing - sheng:	pure <i>ər</i> -rimes	60 sequences
	mixed rimes (<i>ən</i> and <i>ər</i>)	4 "
shang - sheng:	pure <i>ər</i> -rimes	15 "
	mixed rimes (<i>ār</i> : <i>ər</i>)	4 "
k'ü - sheng:	pure <i>ər</i> -rimes	1 "
	mixed rimes (<i>əd</i> : <i>ād</i> : <i>ər</i>)	3 "
mixed tones:		24 "

All the rime sequences tabulated here will be given below. Karlgren's Archaic Chinese phonetic values will be given only for such forms as do not belong to the *ər*-class. Figures added in parenthesis after the rime sequences refer to the Odes as numbered by Karlgren in *The Book of Odes*, (Stockholm 1950).

P'ing - sheng: pure *ər*-class rimes:

萋飛, 歸私衣(2), 菟隕雲懷(3), 桑綏(4), 枚飢(10),
 祁歸(13), 薇悲夷(14), 衣微飛(26), 霜懷(30), 微歸(36),
 咭霏歸(41), 頌衣妻煖私, 萋脂蟻犀眉(57), 懷歸(68), 衣
 歸(88), 淒咭夷(90), 晞衣(100), 崔綏歸歸懷(101), 淒晞眉
 躋祇(129), 衣師(133), 逴飢(138), 衣悲歸(147), 躋飢(151), 蒼
 師(153), 逴祁悲歸(154), 歸悲衣秋(156), 衣歸悲(159), 駢逴
 歸悲(162), 威懷(164), 薇歸, 衣霏逴飢悲衣(167), 逴咭祁歸
 夷(168), 萋悲萋悲歸(169), 桑綏(171), 晞歸(174), 棲馬駢(177),
 雷威(178), 飛躋(189), 夷達(191), 微微衣(193), 靡階(198), 淒
 雖歸, 棲衣(204), 咭潛悲同(208), 茨師(213), 摧綏(216),
 惟脂(245), 雲歸(251), 萋咭(252), 憐毗迷尸屎葵資師(254),
 駢夷葵衣(257), 祁歸(259), 駢咭齊歸懷(260), 同歸(263),
 鳴階, 幾悲(264), 逴綏威夷(284), 飛歸(298), 枚同依逴
 (300), 達齊逴躋逴祇圓(304).

P'ing - sheng : mixed rimes:

1. *twən*¹) 2. *giwed*²) 3. *dz'wər* (40); 4. *g'iən* 5. *g'iər* (222., 299); 6. *siər* 7. *miən* (257).

1. 敦 2. 達 3. 堆 4. 芹 5. 旂 6. 西 7. 瘠

Shang - sheng : pure ər-class rimes:

涕 桶 弟 婢 (39);

洒 澆 (34); 指 弟 (51); 體 禮 死 (52); 藟 弟 (71); 水 弟 (92); 唯
ts'wər 水 (104); 濟 涌 弟 (105); 尾 几 (160); 群 弟 (164); 鯉 旨 (170); 矢
 兕 醴 (180); 匕 砥 矢 履 視 涕 (203); 尾 豈 (221); 濟 穉 醴 比 禮
 (290);

Shang - sheng : mixed rimes:

1. *miwər* 2. *xiwər* 2. *xiwər* 3. *niär* (10); 4. *xwər* 5. *giwər* (154), 6. *siwər*
 7. *siwən* 8. *d'iər* (183); 9. *giwər* 10. *liər* 11. *i'liər* 12. *niər* 13. *d'iər* 14.
niär 15. *kier* (246).

It is interesting to note that the form 16. *ker* is found only in *shang - sheng* sequences. All rime sequences containing 16. *ker* are listed below:

17. *d'iər* 16. *ker* 18. *siər* (110); 16. *ker* 19. *niär* (169); 20. *i'liər* 16. *ker* (170., 220).

There appears justification, therefore, for the treatment of *ker* as a *shang - sheng* word in spite of the fact that the *Ts'ie-yün* records *p'ing - sheng*.

K'ü - sheng : pure ər-class rimes:

21. *b'iər* 22. *ts'iər* (119).

K'ü - sheng : mixed rimes:

23. *tsiər* 24. *piəd* (54); 22. *ts'iər* 25. *tsiär* (179); 26. *liwəd* 21. *b'iər* (241).

1. 尾 2. 燬 3. 通 4. 火 5. 華 6. 水 7. 華 8. 弟 9. 華 10. 履 11. 體 12. 泥
 13. 弟 14. 爾 15. 几 16. 借 17. 弟 18. 死 19. 通 20. 旨 21. 比 22. 伙 23. 濟 24. 閑
 25. 柴 26. 類

¹) Karlgren (*The Book of Odes*) has the reading *twər*. I follow the reading *twən* given in Karlgren's *Glosses to the Kuo Feng Odes* (BMFEA 14, 1942), gloss 112.

²) Evidence to justify the emendation of Karlgren's *giwed* into *giwer* will be given below.

ər-class rimes in mixed tones:

(a) 逵達箴薺弟 (35)	ppp ss
(b) 頹懷遠 (g'wəd) 菟死 (201)	ppp ss
(c) 師氏維吡迷師 (191)	ps pppp
(d) 衣達依底 (195)	ppps
(e) 尸歸逵弟私 (209)	ppps p
(f) 蕝牧同 (239)	ss p
(g) 晨 (šim) 燁 (g'wəm) 斡 (g'ior) (182)	ps p
(h) 推雷遺遠 (g'wəd) 畏摧 (258)	pppp k p
(i) 維葵脆庚 (1:əd) (222)	ppp k
(j) 姜祁私穉穉 (212)	ppp kk
(k) 柳醴地禮皆 (279)	ssss p
(l) 菲體遠死 (35)	ss ps
(m) 煒美莢美 (42)	ss ps
(n) 羣 (g'wəm) 鐸 (š'wər) 苑 (g'wəm) (182)	ps s
(o) 依濟几依 (250)	psps
(p) 泥弟豈 (173)	sk s
(q) 火衣 (154)	s p
(r) 威罪 (198)	ps
(s) 妻弟 (240)	ps
(t) 塵 (šim) 底 (206)	ps
(u) 懷畏 (76)	p k
(v) 濟弟 (239)	sk
(x) 禮至 (š'əd) (220)	sk
(y) 穉水 (212)	ks

We find in these sequences a strong tendency for one tone class to dominate in rime sequences of three or more syllables. Each of the sequences (a), (b) and (j) could well be broken up into two sequences: *ppp* / *ss*, etc. With reference to our earlier remarks in regard to *ker* 'together' it is interesting to find, in sequence (k), the phonetic of this character riming with four *shang-sheng* syllables.

These observations, which are based on a study of all occurrences of ər-class rimes in the *Shi king*, strongly corroborate Karlgren's statement that there is a strong tendency towards identity of tone class amongst the *Shi king* rimes (see Karlgren's *Tones in Archaic Chinese*, BMFEA 32, 1960). We find that out of 115 rime sequences, 91 sequences contain rime words belonging to identical tone classes. In the 24 instances of mixed-tone sequences we find a strong tendency towards one-tone rimes.

Out of the 91 one-tone rime sequences we find that 87 belong to p'ing - sheng and shang - sheng and only four to k'ü - sheng. Furthermore, of the 85 words which belong to the 24 mixed-tone sequences, 76 have p'ing - sheng and shang - sheng and only 9 have k'ü - sheng. These statistics, which are of considerable relevance to the theme of this paper, will be discussed further below.

Thanks to the penetrating research into the phonology of the language of the Han dynasty, the results of which have been recently published by Lo Ch'ang-p'ei and Chou Tsu-mo,³⁾ we are now able to go a step further and investigate the distinctiveness of Karlgren's *æd*- and *ær*-classes in the riming system employed by the authors of Western and Eastern Han.

Before we start our main inquiry, it is necessary to state, in brief terms, the main differences between the rime classification of Karlgren and that used by Lo Ch'ang-p'ei and Chou Tsu-mo. Karlgren's *æd*-class (*Grammata Serica* class X and *Compendium of Phonetics in Ancient and Archaic Chinese* class VI) comprises the finals *æd*, *wæd*, *ed*, *wed*, *iæd*, *iwæd*, *ied*, *iwed*, *iæd* and *iwæd*. The presence of the voiced dental stop is deduced from rime and especially *hie - sheng* contacts with words of the *æt*-class.

Karlgren's *ær*-class (*Grammata Serica* class XI and *Compendium* class VII) comprises the finals *ær*, *wær*, *er*, *wer*, *iær*, *iwær*, *ier*, *iwer*, *iær* and *iwær*. The presence of the final *-r* is confirmed by contacts, in rime and in *hie - sheng*, with *-n* words.

Karlgren notes the absolute parallelism between the two classes: *æd* : *ær*, etc. Since words belonging to these two classes appear under the same rimes in the *Ts'ie-yün*, the allocation of individual forms to either of these classes must be based entirely on rime and *hie - sheng* contacts.

On the whole, Lo Ch'ang-p'ei and Chou Tsu-mo follow the classification of the *Shi king* rimes into the 22 classes established by Wang Nien-sun.⁴⁾

In their classification of the words which are relevant to the present inquiry — Karlgren's *æd*- and *ær*-classes — Lo Ch'ang-p'ei and Chou Tsu-mo accept the modifications of Wang Nien-sun's classification suggested by various scholars whose works appeared subsequent to that of Wang Nien-sun.⁵⁾

Wang Nien-sun's 脂 *Chī* class, which comprises our *æd*- and *ær*-words, must, according to Lo Ch'ang-p'ei and Chou Tsu-mo, be broken up into a 脂 *Chī* class and a 微 *Wei* class. This subdivision is, according to these two scholars, necessitated

³⁾ Lo Ch'ang-p'ei and Chou Tsu-mo: *Han Wei Tsin Nan-pei-ch'ao yün-pu yen-pien yen-kiu*, K'o-hue ch'u-pan-she, Peking 1958.

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⁴⁾ Wang Nien-sun's 22 classes are to be found in an unpublished manuscript in the Peking University collection entitled *Shi king k'un king Ch'u-to'i ho-yün-p'u 詩經羣經楚辭合韻譜*. These classes correspond to his 21 classes (as found in his letter to Li Fang-po, which was published by his son, Wang Yin-chi, in the *King-yi shu-wen*, chüan 31) plus 冬 (Karlgren's *tóng*).

⁵⁾ For a detailed description of these modifications see Wang Li: *Shang-ku yün-mu hi-t'ung yen-kiu 上古韻母系統研究* Ts'ing-hua Journal 12:3.

by the fact that words belonging to the seven *Ts'ie-yün* rimes below (which words form the bulk of Wang Nien-sun's *Chī* class and Karlgren's *əd*- and *ər*-classes), rime freely in the *Shī king* but at the same time may be kept strictly apart in two groups according to their *hie - sheng* contacts. The relation of these two groups to the *Ts'ie-yün* rimes is stated as follows:

the 脂 *Chī* group:

Ts'ie-yün 脂 *k'ai-k'ou* (Karlgren's *ji*)
 „ 皆 *k'ai-k'ou* (*äi*)
 „ 支 (*jiě, jwiě*)
 „ 齊 (*iei, iwei*)

the 微 *Wei* group:

Ts'ie-yün 微 (*jěi, jwěi*)
 „ 灰 (*uäi*)
 „ 咍 (*äi*)
 „ 脂 *ho-k'ou* (*jwi*)
 „ 省 *ho-k'ou* (*wäi*)

K' ü s h e n g words belonging to Wang Nien-sun's 至 class (Karlgren's Arch. *ïä*) are incorporated in Lo Ch'ang-p'ei's and Chou Tsu-mo's 脂 class.⁶⁾

We therefore find that Lo Ch'ang-p'ei's and Chou Tsu-mo's two classes cut across Karlgren's division of these words into an *əd*- and an *ər*-class.

According to Lo Ch'ang-p'ei and Chou Tsu-mo these two classes — the *Chī* and the *Wei* class — were no longer distinguished in the riming system employed by the authors of the Western and the Eastern Han.⁷⁾

For the purpose of their investigation of Han phonology these two classes have therefore been amalgamated into one class, the *Chī* class. All the words belonging to this class and which occur as rimes in the poetry and the rimed prose of the Han dynasty are listed in Lo ch'ang-p'ei's and Chou Tsu-mo's work (pp. 162—163). The p'ing - s h e n g group numbers 154 words, the s h a n g - s h e n g group 37 and the k' ü - s h e n g group 110 words.

We can now make the highly interesting observation that out of the 154 p'ing - s h e n g words of the amalgamated *Chī* class *all but three belong to Karlgren's ər-class*. The three exceptions are: 1. *p'wəd/p'uäi*-, 2. *gäwəd* and 3. *ñjär*. The first of these words is found riming with 4. *dz'wər* and 5. *g'wər* (Chang Heng's *Tung king fu*) and is therefore classified as a p'ing - s h e n g word.⁸⁾

⁶⁾ For a more detailed description of these two classes see Lo Ch'ang-p'ei and Chou Tsu-mo, op. cit., pp. 28—31.

⁷⁾ The material on which Lo Ch'ang-p'ei and Chou Tsu-mo have based their study consists of the relevant parts of Yen K'o-kün's anthology *Ts'üan shang-ku san-tai Ts'in Han San-kuo Liu-ch'ao wen* 全上古三代秦漢三國六朝文 and Ting Fu-pao's *Ts'üan Han San-kuo Ts'in Nan-pei-ch'ao shi* 全漢三國晉南北朝詩

⁸⁾ In the allocation of individual words to one of the four tone classes the co-authors use the position of the word in rime sequences as their sole criterion and the tone indications given in the *Ts'ie-yün* and other rime dictionaries are disregarded.

The second form — *giwed* — belongs to a phonetic series which transgresses Karlgren's distinction between *əd* and *ər* (See *Grammata Serica* 540 and 544). It may also be significant that this form rimes exclusively with words of the *ər*-class in the *Shī king* (See *Shī king*: 40. *Pei men* and 258. *Yün Han*).

The third exceptional form — *ñär* — belongs to Karlgren's *är*-class, of which we find a few words incorporated in Lo Ch'ang-p'ei's and Chou Tsu-mo's amalgamated *Chī* class. It must also be noted that the p'ing - sheng group includes 6. *dz'wər*. This word is not included in *Grammata Serica* and the reading has been deduced from that of the phonetic.⁹⁾

On the basis of this overwhelming evidence for the predominance of *ər*-class words in p'ing - sheng 2. *giwed* must be changed into *giwer*.

When we turn to the shang - sheng rimes in Lo Ch'ang-p'ei's and Chou Tsu-mo's amalgamated *Chī* class we find that out of 37 recorded rimes *all but one* belong to Karlgren's *ər*-class. The one exception is 7., which belongs to Karlgren's *är*-class.

The p'ing - sheng and shang - sheng groups include a small number of words, which Karlgren has been unable to reconstruct for lack of rime and hie - sheng connections. The Archaic Chinese values of these forms will be given at the end of this paper.

The k'ü - sheng group of the Han rimes includes a small number of words which Karlgren by virtue of rime and hie - sheng contacts allocates to different *Shī king* classes. These are 8., 9., 10., and 11., belonging to Karlgren's *ïəd*-class; 12. of the *äd*-class; 13. of the *ət*-class and 14. of the *əg*-class.

1. 配 2. 遺 3. 旂 4. 推 5. 懷 6. 業 7. 峽 8. 至 9. 柰 10. 能 11. 理 12.
第 13. 辭 14. 背

The k'ü - sheng group also includes a few words, which Karlgren has been unable to reconstruct for lack of rime and hie - sheng connections. The Archaic Chinese values of these words will be given at the end of this paper. (In the following rime lists such forms will be placed within brackets.)

We may now proceed to investigate in detail the rime sequences within the k'ü - sheng group of Lo Ch'ang-p'ei's and Chou Tsu-mo's *Chī* class. In the material from the Western Han we find a total of 21 rime sequences. Of these, 14 sequences contain rime words belonging to Karlgren's *əd*-class; two sequences contain words belonging to the *ər*-class and five sequences contain a mixture of *əd*-words and *ər*-words.

A complete inventory of the *əd*-sequences is given below:

1. *giwəd*: *nwəd*; 2. *k'ïəd*: *giwəd*; 3. *liəd*: *k'ïəd*; 4. *d'əd*: *d'wəd*; 5. *miwəd*: *k'iwəd*; 6. [*χïwəd*]: *twəd*; 7. *giwəd*: *liwəd*; 8. *giwəd*: *ngïəd*; 9. *giwəd*: *k'iwəd*;

⁹⁾ The Archaic Chinese reading is found in Karlgren's *Compendium*, where the *Grammata Serica* reading *dz'wəd* has been changed into *dz'wər* (see *Compendium*, p. 302).

10. *k'iwəd*: *dziwəd*; 11. *liəd*: *dziwəd*; 12. *dziwəd*: *d'əd*; 13. *giwəd*: *tsiwəd*;
14. *liəd*: *liəd*.¹⁰⁾

The two *ər*-sequences are:

15. *'iwar*: *'war*: *tiwar*: *siər*: *g'wer*; 16. *giwar*: *giwar*.¹¹⁾

In spite of the tone series *k p p s k* (as indicated by the *Ts'ie-yün*) all the words of series 15. are by Lo Ch'ang-p'ei and Chou Tsu-mo classified as *k'ü - sheng*.

The mixed rime sequences (*əd/ər*) are listed below:

17. *giwəd*: *liəd*: *niər*; 18. *xiər*: *liəd*; 19. *liəd*: *piər*; 20. *k'wer*: *liəd*; 21. *dz'wər*: *giwəd*.¹²⁾

1. 渭内, 2. 氣位, 3. 度氣, 4. 達隊, 5. 味貴, 6. [齊]對, 7. 位類, 8. 謂
制, 9. 位貴, 10. 貴遂, 11. 度燄, 12. 遂達, 13. 位醉, 14. [隸]至, 15. 畏限
追死壞, 16. 圓緯, 17. 總贅二, 18. 歎淚, 19. 至比, 20. 愧淚, 21. 罪位,

The *ər*-class words occurring in these sequences will be discussed further below.

In the material from the Eastern Han we find a total of 28 rime sequences. Of these, 19 sequences contain words belonging to the *əd*-class (including one *iəd* and one *ət*-word) and nine sequences contain words of both the *əd*- and the *ər*-class.

The 19 *əd*-sequences are listed below:

1. *k'iwəd*: *dziwəd*; 2. *d'əd*: *d'iwəd*: *kəd*: *mwəd*; 3. *giwəd*: *k'iwəd*; 4. *g'ied*: *tsiwəd*: *k'ied*: *t'wəd*; 5. *k'ied*: [*piəd*]: *kəd*: *liwəd*: *k'ied*; 7. *giwəd*: *k'ied*; 8. *miwəd*: *liəd*; 9. *k'iwəd*: *k'ied*; 10. *mwəd*: *twəd*: *siwəd*; 11. *gwəd*: *dziwəd*: *'iwəd*: *dz'iwəd*: *g'iwəd*; 12. *k'ied*: *giwəd*: *siəd*: [*piəd*]; 13. *k'ied*: *giwəd*: *k'ied*; 14. *k'ied*: *dziwəd*: *k'iwəd*; 15. *dziwəd*: *dz'iwəd*; 16. *dziwəd*: *k'iwəd*: *g'iwəd*; 17. *giwəd*: *'iwəd*; 18. *giwəd*: *p'iwət*; 19. *'əd*: *siwəd*: *piəd*: *p'ied*: *g'iwəd*.¹³⁾

The nine sequences containing words of both the *əd*- and *ər*-classes are the following:

20. *d'wəd*: *siər*; 21. *k'iwəd*: *d'iwəd*: *k'ied*: *niər*; 22. *k'ied*: *giwəd*: *niər*; 23. *siər*: *piwəd*: *d'iar*: *liəd*: *giwəd*: *dz'iwəd*; 24. *twəd*: [*xiwəd*]: *dz'iwəd*: *d'iar*: *p'iwət*; 25. *'iwəd*: *giwar*; 26. *giwəd*: *ts'iar*; 27. *siwəd*: *g'iwəd*: *dziwəd*: *miəd*: *niər*;
28. *xiər*: *k'iwəd*.¹⁴⁾

¹⁰⁾ I shall here confine myself to giving the authors' names. For more detailed references see Lo Ch'ang-p'ei's and Chou Tsu-mo's study. 1. Si-ma Siang-ju; 2. and 3. Wang Pao; 4. Wei Hsuan-ch'eng; 5. Liu Hsiang; 6.—10. Yang Hiung; 11. Liu Hin; 12., 13. anonymous; 14. Si-ma Siang-ju.

¹¹⁾ 15. Mei Sheng; 16. Liu Hsiang.

¹²⁾ 17. Si-ma Siang-ju; 18., 19. Wang Pao; 20. Pan Tsie-shu; 21. Yang Hiung.

¹³⁾ 1. Feng Yen; 2. Fu Yi; 3.—6. Pan Ku; 7. Wang Yi; 8., 9. Li Yu; 10.—12. Chang Heng; 13., 14. Ts'uei Huan; 15.—17. anonymous; 18. Feng Yen; 19. Wang Yen-shou.

¹⁴⁾ 20., 21. Pan Ku; 22. Chang Heng; 23. Ma Jung; 24., 25. Wang Yen-shou; 26. Ts'ai Yung; 27., 28. anonymous.

1. 貴悴; 2. 連墜既昧; 3. 位貴; 4. 墜醉氣退; 5. 氣[響]; 6. 概類氣; 7. 位棄; 8. 未驚; 9. 貴器; 10. 內對諱; 11. 聞隨尉萃圓; 12. 器位肆[響]; 13. 器位器; 14. 氣遂貴; 15. 穗悴; 16. 遂季惠; 17. 胃尉; 18. 位繫; 19. 暖運祕漚悴; 20. 隊師; 21. 貴墜氣戴; 22. 器位戴; 23. 師沸雉至漬悴; 24. 對[雖]悴視髴; 25. 蔚瑋; 26. 位次; 27. 粹饋遂寐二; 28. 歎喟;

After this tabulation of the rimes of the Western and Eastern Han we are now able to draw the following conclusions:

- (a) Karlgren's two classes — *əd* and *ər* — are kept apart in the rime system of the Han dynasty.
- (b) Lo Ch'ang-p'ei and Chou Tsu-mo have, on the basis of *hie - sheng* contacts, subdivided Wang Nien-sun's 脂 *Chī* class into two classes: the *Chī* and the *Wei* class. Their subdivision cuts across the correct division into *əd* and *ər* established by Karlgren. Consequently they were unable to detect the distinctiveness of these two classes (*əd* and *ər*) and erroneously combined their *Chī* class and *Wei* class into one class, which they term the *Chī* class, the members of which are then said to interchange freely in the rime system of the Han dynasty.
- (c) Karlgren established the distinctiveness of his *əd*- and *ər*- classes on the criterion that these two classes are kept well apart in the *Shī king* and in *hie - sheng*. The phonetic values attributed to these classes are based on the contacts — in rime and *hie - sheng* — between *-r* and *-n* on the one hand, and between *-d* and *-t* on the other. We now find that in the rime system of the Han dynasty *the distinction between the əd- and the ər-class is tonally conditioned*. Words belonging to the *ər*-class occur as *p'ing - sheng* and *shang - sheng* rimes. Out of 191 *p'ing - sheng* and *shang - sheng* rimes all but four belong to the *ər*-class. The four exceptions have already been discussed above. We also find that words belonging to the *əd*-class *do not occur outside the k'ü-sheng rime sequences*. These statistics provide full evidence of the fact that the distinction between the *əd*-class and the *ər*-class was tonally conditioned.

The only apparent overlapping between the two classes obtains in the fact that a small number of words, which belong to Karlgren's *ər*-class, are found as rimes in *k'ü - sheng*. These words are

1. 2. *ñiər*; 3. *piər*; 4. *d'iər*; 5. *ts'iər*; 6. *xiər*; 7. [*xiwər*]; 8. *kiwər*; 9. *giwər*;
10. *dz'wər*; 11. *d'iər*; 12. *giər*.

Of these words 1.—5., and 8. all have *k'ü - sheng* readings. 6. has *p'ing - sheng* and also a *k'ü - sheng* reading, in *Ch'u-ts'ü* (Li Sao), where all the

earliest commentators agree on the Ancient Chinese k' ü - s h e n g reading *χjěi*.¹⁵) Note also our 6. riming with 37. *liět* in Feng fu by Sung Yü. (See Karlgren: *Word Families in Chinese* (BMFEA 5 (1933) p. 32)). 9.—11. have s h a n g - s h e n g and 12. has p' i n g - s h e n g. 7. rimes in both p' i n g - s h e n g and k' ü - s h e n g.

1. and 2. belong to a limited phonetic series, all the members of which have k' ü - s h e n g. The attribution of these words to the *ər*-class is evidenced by neither rime nor h i e - s h e n g and these words (1. and 2.) could therefore equally well be regarded as belonging to the *əd*-class. 3. has h i e - s h e n g contact with 13. *b'iat* (*Chuang-tsü*) and, furthermore, the *Ts'ie-yün* manuscripts (*Ts'ie* III, *Wang* I and *Wang* II) have the reading *b'iet*, which is equated with 14. As for 12. we note the obvious semantic relation between *šjar* 'army' and 15. *šliwät* 'to lead an army' and 15. *šliwäd* 'leader of an army'; we also note the semantic relation between 12. *šjar* 'chief; master, to take as a master' and 16. *šliwät* and *šliwäd* 'to follow; to lead; leader', and, finally, between 12. *šjar* 'to imitate, to take as a norm' and 16. *liwät* 'norm'. A probable semantic connection also obtains between 5. *ts'jar* 'to arrange in order; order; sequel' and 17. *d'jar* 'order; series; to arrange'.

Apart from these contacts with -*t* words amongst these *ər*-class words, which are found, anomalously, as k' ü - s h e n g rimes of the Han dynasty, we find a number of identical contacts — semantic or purely phonetic — between -*r* words and -*t* words. Examples are 18. *niər* 'near, close' and 19. *niät* 'close-standing, familiar, intimate'; 20. *piwär* and 21. *piwät*; 22. *b'iwär* 'hidden; obscure' and 23. *piwät* 'cover-screen'; 24. *b'iwär* 'to cut the feet' and 25. *p'iwät* 'to chop'; 26. *dz'wär* 'high; rocky' and 27. *dz'iwät* 'high; 'rocky mountain top'; 28. *tiwär* 'to pursue, overtake'; and 29. *d'iwät* 'to proceed, to follow'.¹⁶)

Amongst the h i e - s h e n g contacts between *ər* and *ät* we note the following: 30. *ker* in 31. *ket*; 32. *kiwer* in 33. *k'iwät*; 34. *d'ier* in 35. *d'iat*. Note also 36. *niər* and also *niät* (*Chuang-tsü*).

1. = 2. 戴 3. 比 4. 視 5. 次 6. 款 7. [睢] 8. 愧 9. 瑋 10. 罪
11. 雉 12. 師 13. 批 14. 堅 15. 帥 16. 率 17. 臂 18. 尼 19. 昵 20. 來 21. 希
22. 扉 23. 第 24. 刺 25. 刺 26. 崔 27. 崒 28. 追 29. 述 30. 皆 31. 指 32. 癸
33. 關 34. 弟 35. 豐 36. 蕭 37. 標

These semantic and phonetic connections between *ər* words and *ät* words strongly corroborate my thesis that the distinction between Karlgren's *əd*-class and *ər*-class was non-phonemic and conditioned by tonal features: we must assume that originally both classes ended in -*d*. The final voiced stop was retained in k' ü - s h e n g; this lends weight to the assumption that Archaic Chinese k' ü - s h e n g,

¹⁵) See Kiang Liang-fu: *K'ü Yüan fu kiao chu*, Peking 1957, p. 78.

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¹⁶) For these and other examples of this contact see Karlgren's *Word Families in Chinese*, BMFEA 5, 1933.

like that of Modern Northern Mandarin, was a falling tone accompanied by diminishing intensity. In tones other than *k' ü - s h e n g* — in *p' i n g - s h e n g* and *s h a n g - s h e n g* — the *-d* was gradually weakened and eventually replaced by *-r*.

The fact that the *əd*- and the *ər*- words are in complementary distribution necessitates the following slight adjustment of Karlgren's Archaic Chinese reconstructions: *əd*-finals are restricted to *k' ü - s h e n g*: *ər*-finals are restricted to *p' i n g - s h e n g* and *s h a n g - s h e n g* and all *k' ü - s h e n g* words belonging to Karlgren's *ər*-class must be changed into the *əd*-class. In other words, the new phonetic values suggested here will be identical with those found in *Grammata Serica*, series 519: *l_iəd/l_ii*- 'profit', but *l_iər/l_ii* 'pear'.

That the distinction between Karlgren's *əd*-class and *ər*-class was non-phonemic and tonally conditioned can also be proved by other criteria. When we examine all the rime contacts between words belonging to Lo Ch'ang-p'ei's and Chou Tsu-mo's *Chī* class and words belonging to other rime classes, we get the following result:

脂	之			支			歌			祭	質	眞
	p	s	k	p	s	k	p	s	k	k	j	p
	14	8	5	9	1	1	48	2	1	29	11	2
	<i>ər</i>	<i>ər</i>	<i>əd</i>	<i>ər</i>	<i>ər</i>	<i>ər</i>	<i>ər</i>	<i>ər</i>	<i>ər</i>	<i>əd</i>	<i>əd</i>	<i>ər</i>

This table shows all the rime contacts in the rimed literature of the Western Han between Lo Ch'ang-p'ei's and Chou Tsu-mo's *Chī* class and the other rime classes listed above. There is a total of 84 *p' i n g - s h e n g* and *s h a n g - s h e n g* contacts, and in these all *Chī* class words belong to Karlgren's *ər*-class. Of 36 *k' ü - s h e n g* contacts all but two of the *Chī* group belong to Karlgren's *əd*-group. The two exceptions are *ḡər* 'army', which form we have discussed at length above, and *k'wər/k'uḡi*- (*Grammata Serica* 569 g.) which form must be altered to *k'wəd* in accordance with the adjustment described above. It is interesting to note that Karlgren suggests a semantic connection between this form and *k'wəd/k'uḡi*- (*Grammata Serica* 510 a.).

The splitting of an original **əd*-group into two tonally conditioned and phonetically differentiated variants — the *əd*- and the *ər*-group — must have taken place prior to the phonological stage revealed by the *Shī kīng* rimes and the *hie - s h e n g*. This is the reason why the contacts — in rime and *hie - s h e n g* — between *əd* and *ər* are so relatively few and also why the *ər*-group has such frequent contacts with the *-n* groups.

We would naturally expect that the nature of the distinction between the *əd*-class and the *ər*-class would be paralleled by that of the *ád*-class and the *ár*-class; in other words, we would expect to find the *ár*-words as the *p' i n g - s h e n g* and the *s h a n g - s h e n g* complement to the *ád*-words, which would be restricted to *k' ü - s h e n g*.

Karlgren's *ār*-class comprises the following finals: *ār*, *wār*, *īar*, *īwar*, *īār* and *īwār* (See *Grammata Serica* class VI and *Compendium* class VIII).

We find, in the *Shī king*, a total of 11 rime sequences containing words from Karlgren's *ār*-class. These are

- (a) *miwār*: *χiwār*: *χiwār*: *ñiār* (10); (b) *ts'ār*: *mīār* (43); (c) *tsā*: *ts'ā*: *nār* (59);
 (d) *χwār*: *giwār* (154); (e) *giwār*: *liār*: *t'liār*: *niār* (246); (f) *ā*: *nār*: *g'ā* (228);
 (g) *pwār*: *t'ān* (259); (h) *ts'īar*: *tsiār* (179); (i) *īwār*: *īwān* (201); (j) *χwār*:
īar (154); (k) *d'īar*: *χwār* (212).

(a) 尾 蝦 蝦 通 (b) 泚 彌 (c) 左 瑳 難 (d) 火 葦 (e) 葦 履 體
 泥 (f) 阿 難 何 (g) 番 單 (h) 伙 柴 (i) 萎 怨 (j) 火 衣 (k) 樛 火

In the list given above we find five *shang-sheng* sequences, (a) — (e), two *p'ing-sheng* sequences, (f) and (g), one *k'ü-sheng* sequence (h), and three sequences containing mixed tones, (i) — (k). It should be noted, however, that the *ār*-words in these mixed-tone sequences all have tones other than *k'ü-sheng*.

Out of these *ār*-class words riming in the *Shī king* we thus find one *k'ü-sheng* word, viz. *tsiār* riming with *ts'īar* in sequence (h) above. Since the latter form for reasons given above has to be altered into *ts'īad* it is tempting also to change *tsiār* into *tsiād*.

Before we proceed any further, it is necessary to examine the problem from another angle. If Karlgren's *ād*- and *ār*-class words represent tonally conditioned variants of an originally undifferentiated **ād*-class, we would expect to find a number of contacts — semantic and purely phonetic — between the *ār*-class on the one hand, and the *āt*-class on the other. We may note the following cognate pairs:

- 1., 2. *tār*, *tān* 'exhausted'; 'grieved': 3. *tāt* 'grieved'; 4. *kwār*: 5. *kwāt* 'to bind'; 6. *pwār*: 7. *pwāt* 'to spread'; 8. *ts'ār*: 9. *siāt* 'small; petty'; 10. *ñiār*: 11. *niāt* 'near'; 12. *īwar*: 13. *tīwat* 'grieved, sad'.

1. 庫 2. 憊 3. 憊 4. 哀 5. 括 6. 播 7. 撥 8. 泚 9. 屑 10. 通 11. 呢
 12. 憊 13. 憊

A thorough search for similar contacts may yield a few more instances. The total number of such contacts would no doubt be considerably smaller than the number of contacts of the types *ār/ān* and *ār/ər*, which are found in the *Shī king* rimes, in *hie-sheng* and in cognate series. If we assume that the complementary and tonally conditioned distribution of the *ād*-class and the *ər*-class is valid also for the *ād*- and *ār*-classes, this phenomenon (the scarcity of *ār/āt* contacts and the abundance of *ār/ər/ān* contacts) can only mean that the splitting of an originally undifferentiated **ād*-class into two tonally conditioned and phonetically differentiated classes (*ād* and *ār*) took place prior to the phonological stage revealed by the *Shī*

king rimes and the h i e - s h e n g; once this stage had developed, the *ár*-class words came to be associated with the phonetically more alike *án*- and *ær*-classes.

If we consider the theory of the complementary distribution proved also for these classes, we will have to make the same adjustment to Karlgren's Archaic Chinese values as were made in the *əd*- and *ær*-classes: *ád*-finals are restricted to k' ü - s h e n g; *ár*-finals are restricted to p' i n g - s h e n g and s h a n g - s h e n g; Karlgren's k' ü - s h e n g words with *ár*-finals will have to be changed into *ád*-finals.

In the following we shall discuss the implication of this new theory with regard to the development of these finals from Archaic Chinese into Ancient Chinese. The two finals *ár* and *wár* will be discussed later and I shall here concentrate on the finals *ád*, *wád*, *ad*, *wad*, *äd*, *wäd*, *iäd*, *iwad*, *iäd*, *iwäd*, *iad*; *iar*, *iwar*, *iär*, *iwär*.

Summarizing Karlgren's description we find that the final -*d* — in the *ád*-class as well as in the *əd*-class — has been vocalized into -*i*: *ád* > *ái*; *äd* > *äi*; *iwad* > *iwäi*.

The development of *iäd* and *iwäd* shows a close parallel to that of *iäd*, *iwäd*, *iær*, *iwär*. The development of these latter finals was, according to Karlgren, conditioned by the initial. After velar initials and after bilabials (with *w*) the following development took place:

<i>k' iäd</i>	<i>k' iäi</i>	<i>k' jěi</i>
<i>k iær</i>	<i>k iäi</i>	<i>k jěi</i>
<i>p iwär</i>	<i>p iwäi</i>	<i>p jwěi</i>

After initials other than these we find the following development:

<i>l iäd</i>	<i>l iäi</i>	<i>l jěi</i>	<i>l ji</i>	as compared to
<i>l iær</i>	<i>l iäi</i>	<i>l jěi</i>	<i>l ji</i>	
<i>k' iäd</i>	<i>k' iäi</i>	<i>k' iäi</i>	<i>k' jěi</i>	

After velar initials and after bilabials (with *w*) the development of *iäd* and *iwäd* has been parallel to that of *iäd*, etc.:

<i>ng iäd</i>	<i>ng iäi</i>	<i>ng iäi</i>
<i>χ iwäd</i>	<i>χ iwäi</i>	<i>χ iwäi</i>
<i>b' iwäd</i>	<i>b' iwäi</i>	<i>b' iwäi</i>

The only difference between the development of *iäd* and *iäd* is that *iäi* has been less susceptible of palatalization than *iäi*.

The close parallelism between *iäd* and *iäd* probably obtained also in syllables with initials other than velars and bilabials (with *w*): the evolution of the form *s iäd* (the adjusted form for Karlgren's *ts iär*-) has probably been as follows:

<i>ts iäd</i>	<i>ts iěi</i>	<i>ts iäi</i>	<i>ts iě</i>	as compared to
<i>ts iäd</i>	<i>ts iäi</i>	<i>ts iěi</i>	<i>ts i</i>	

The *a aigu* would quite naturally be more susceptible to palatalization than the central vowel *ä*. The final *iěi* < *iäd* did therefore not coincide with the final *iěi* < *iäd*. The complete palatalization of *iěi* and the thereby conditioned displacement of

quantity, *iĕi* > *iĕ*, is a very natural development. Finally the last stage, *iĕ*, has been reached through dissimilation of *iĭ* into *iĕ*.

According to Karlgren the development of his *ār*-class¹⁷⁾ and his *ər*-class has not been parallel. In the *ər*-class *-r* has been vocalized into *-i*, whereas in the *ār*-class it has disappeared without trace. Karlgren proposes that after the drop of *-r* there was a displacement of quantity: *iĕar* > *iĕā*. This theory regarding the displacement of quantity has been introduced to account for the fact that after the drop of *-r* the resulting final did not coincide with the *ia* of the *ā*-class. Karlgren also refers to the analogical influence from the strong category with Archaic *ia* (>*iĕ*) in the *ā*-class. In the finals with velar medials (*iwar* and *iwār*) Karlgren suggests that *i* and *w* changed place through metathesis: *xiwār* > *xjwiĕ*.

I now suggest the following adjustment of Karlgren's theory regarding these transitions: the *-r* of the finals *iār*, *iwar*, *iār* and *iwār* was vocalized into *-i*; on this point, therefore, there is a perfect parallel between the *ər*-class and the *ār*-class. In contrast to the development of the corresponding finals of the *ər*-class the subsequent development was not conditioned by the initial. The following transitional stages are suggested:

<i>nĭār</i>	<i>nĭĕi</i>	<i>nĭiĭ</i>	<i>nĭiĕ</i>
<i>xiwār</i>	<i>xiwĕi</i>	<i>xiwiĭ</i>	<i>xjwiĕ</i>

This theory has the following advantages:

(a) it reveals the close parallelism between the *ər*- and the *ār*-classes:

<i>nĭər</i>	<i>nĭĕi</i>	<i>nĭiĕi</i>	<i>nĭi</i>
<i>nĭār</i>	<i>nĭĕi</i>	<i>nĭiĭ</i>	<i>nĭiĕ</i>

and, furthermore, between transitions like

<i>tsiād</i>	<i>tsiĕi</i>	<i>tsiĭ</i>	<i>tsiĕ</i>
<i>iĕār</i>	<i>iĕĕi</i>	<i>iĕiĭ</i>	<i>iĕiĕ</i>

(b) the development of the finals *iwar* and *iwār* can be explained without reference to metathesis.

A corroboration of the suggestion that *-r* was vocalized into *-i* is found in the transition *dz'ār* > *dz'āi* (*Grammata Serica Recensa* 358 x.).

The theory proposed here concerning the vocalization of *-r* in the *ār*-class appears to be contradicted by the fact that *-r* has disappeared without trace in the finals *ār* and *uār*, which have become Ancient Chinese *ā* and *uā*. The obvious solution to this problem is that *-r* was lost after the dark and velarized *ā* already before the vocalization of *-r* took place in the finals *iār*, *iwar*, *iār* and *iwār*.¹⁸⁾

¹⁷⁾ The two finals *ār* and *uār* will be discussed below and I shall here confine myself to the finals *iār*, *iwar*, *iār*, *iwār*.

¹⁸⁾ This may be confirmed by the fact that 1. *xwār* rimes within the class corresponding to Karlgren's *ā*-class in the poetry of the Han dynasty (see Lo Ch'ang-p'ei and Chou Tsu-mo, op. cit. p. 154), whereas a few words with the finals *iār*, *iwar*, *iār* and *iwār* are found within the *ər*-section of the *Ch* class. The presence of a final *-r* in this class is confirmed by rimes, such as 2. *d'wən*: 3. *d'wər* (Wang Pao) and 4. *'iən*: 5. *d'iər* (Yang Hiung). Cf. also Cheng Hūan's well-known gloss to Li Ki (Chung Yung): "6. *'iər* is read like 4. *'iən*." 1. 火 2. 洩 3. 頰 4. 般 5. 邊 6. 衣

The theory presented here regarding the complementary distribution of *ád-* and *ár-* finals appears to be contradicted by the fact that Archaic Chinese possessed a few forms like 1., 2. *târ/tâ-*; 3. *k'lwâr/k'uâ-*; 4. *wâr/uâ-* and 5. *b'wâr/b'uâ-*.

These *k' ü - s h e n g* forms ending in *-r* are anomalous in the phonological system outlined in this paper. We cannot, of course, change these forms into *ád*, since they are all listed under the *Ts'ie-yün* finals *â* and *uâ*, and since there is no trace of a vocalized *-d*.

The following observations may be made with regard to these words: 1. Karlgren has *tân/tân* and *târ/tâ-* 'disease, suffering, distress'; *Ts'ie-yün* gives the readings *tân* and *d'ân* (both in *p'ing - s h e n g*) and also *tâ:* and *tâ-* 'toiled, exhausted'; 2. Karlgren: *d'ân/d'ân-* 'to fear, dislike'; *târ/tâ-* 'toiled, exhausted'; *King-tien shī-wen* identifies 1. and 2. (Cf. Karlgren, *Glosses on the Ta Ya and Sung Odes*, gloss 998). 1. and 2. may be semantically connected with 6. *tât/tât* 'grieved'; if so, this would greatly strengthen our theory. *Ts'ie-yün* has a *p'ing - s h e n g* reading for 4. One *Ts'ie-yün* manuscript (Wang I) has a *k' ü - s h e n g* reading. 5. *b'wâr/b'uâ-* may be semantically connected with 7. *pwât/puât*.

1. 瘡 2. 憊 3. 課 4. 踈 5. 播 6. 怛 7. 撥

With regard to these five words I can do no more than to state that they are anomalous in the theory developed here regarding the complementary distribution of *-d-* and *-r-* words. In my opinion these stray cases cannot invalidate the present theory regarding this complementary distribution.¹⁹⁾

This inquiry enables us to decide the Archaic Chinese values for some of the words which Karlgren has been unable to reconstruct for lack of rime and *h i e - s h e n g* contacts (See *Grammata Serica*, 1236 and following).

The following five words are all found in the *p'ing - s h e n g* and *s h a n g - s h e n g* section of Lo Ch'ang-p'ei's and Chou Tsu-mo's *Chī* class (our *ər*-class): 1. (*Grammata Serica* 1240 h.) *kwer/kwǎi*; 2. (1237 v.) *ñiwər/ñzwi*; 3. (1241 d.) *giər/yiei*; 4. (1237 a.) *b'jər/b'ji*; and 5. (1237 u.) *xiwər/xjwi* (This form also rimes in *k' ü - s h e n g*; *Ts'ie-yün* has an alternative *k' ü - s h e n g* reading, therefore also *xiwəd*).

The following words are found as *k' ü - s h e n g* rimes and may therefore be allocated to our *əd*-class: 6. (1239 a.) *xiwəd/xjwǎi*; 7. (1241 m.) *liəd/liei-*; 8. (1237 y.) *piəd/pji-* (*Shī ming* contains the etymological equation 8. = 9. *p'iwət*).

Archaic Chinese values can also be assigned to the following few words on account on their riming with words *outside* Lo Ch'ang-p'ei's and Chou Tsu-mo's *Chī* class: 10. (1241 a.) *kiəd/kiei-* riming with 11. *tiəd/tiei-*; 12. (1237 a.) *kjəd/kji-* and *g'jəd/g'ji-* riming with 13. *liəd*, 14. *liət*, 15. *liəb > liəd* and 16. *ñjər* (our *ñjəd*).

1. 乘 2. 鞋 3. 兮 4. 圮 5. 睢 6. 疥 7. 隸 8. 轡 9. 拂 10. 計 11.

蒂 12. 汨 13. 戾 14. 質 15. 贗 16. =.

¹⁹⁾ One might perhaps venture a guess that the *k' ü - s h e n g* reading of these words has been introduced from the *â*-class.

FINAL -d AND -r IN ARCHAIC CHINESE

BY

BERNHARD KARLGREN

The preceding article by Göran Malmqvist is highly interesting and brings up important phenomena for discussion. The theory resultant from his investigation is that words ending in Arch. -d and words ending in Arch. -r all had -d in Proto-Chinese, and that the scheme in Arch. Chinese was due to tonal conditions:

Proto-Chinese	Arch. Chinese
-d-, d'	-r-, -r'
-d\	-d\

Thus original -d, according to Malmqvist, developed into -r in words with p'ing sheng and shang sheng,¹⁾ but was preserved as -d in words with k'ü sheng. This is an ingenious theory, but some important facts seem to constitute a serious obstacle for its acceptance. An alternative interpretation will be proposed here.

Let us operate with four groups:²⁾

A. The Arch. at, ət group, i. e. ju sheng words in the a and ə classes, final consonant still preserved in Southern dialects (Arch. finals 1. át, at, ät, 2. iat, iät, iat, 3. wát, wat, wät, 4. iwat, iwät, iwat; and 5. iət, iet, 6. wət, iwət, iwät, 7. et, wet, iwet).

B. The Arch. ad, əd group, final consonant lost before Anc. Chinese (Arch. finals 8. ád, ad, äd, 9. iad, iäd, iad, 10. wád, wad, wäd, 11. iwad, iwäd; and 12. əd, iəd, iəd, 13. wəd, iwəd, iwəd, 14. ed, ied, wed, iwed).

C. The Arch. ar, ər group in p'ing sheng and shang sheng, final consonant lost before Anc. Chinese (Arch. finals 15. ár, är, 16. iar, iär, iar, 17. wár, war, 18. iwar, iwär; and 19. er, ier, ier, 20. wər, iwər, iwər, 21. er, ier, wer, iwer).

1. 葛瞎察 2. 烈獸截 3. 活刮八 4. 說月決 5. 訖鐵
6. 骨屈闕 7. 真猾橋 8. 害薑介 9. 世艾契 10. 外敗拜
11. 歲吠 12. 愛氣戾 13. 對謂惠 14. 屈棄喟位 15. 羅柴
16. 解訛驚 17. 果踝 18. 揣燬 19. 哀衣齊 20. 回歸睽
21. 皆懷几焚

¹⁾ For these Arch. tones see B. Karlgren, *Tones in Archaic Chinese*, BMFEA 32, 1960.

²⁾ For a full documentation see B. Karlgren, *Compendium of Phonetics in Ancient and Archaic Chinese*, BMFEA 22, 1964, pp. 286 and following.

D. The Arch. *ar, ər* group in *k'ü sheng*, final consonant lost before Anc. Chinese. According to my reconstructions (see Compendium pp. 209, 303) exactly the same Arch. finals as group C above, according to Malmqvist the same as group B above. We may express the difference of opinion by the formula: 次 Arch. *ts'iar/d, -r* meaning Karlgren, *-d* meaning Malmqvist. The Arch. finals here thus are the following: *är/d, iär/d, iwär/d; ər/d, iər/d, wər/d, iwər/d, iər/d, ier/d, wer/d, iwer/d*. We had better give a full list of the words in our D group; when marked by an asterisk, the word has alternative readings in *p'ing sheng* or *shang sheng*, along with that in *k'ü sheng*. 22. *k'lwär/d*, 23. *wär/d*, 24. *tsiär/d*, 25. *ts'iar/d*, 26. *dz'iar/d*, 27. *iwär/d*, 28. *d'iwär/d*, 29. *niwär/d*, 30. *liwär/d*; 31. *k'ər/d*, 32. *k'ier/d*, 33. *iər/d*, 34. *d'iər/d*, 35. *d'ier/d*, 36. *d'ier/d*, 37. *niər/d*, 38. *niər/d*, 39. *tsiər/d*, 40. *ts'ier/d*, 41. *piər/d*, 42. *b'ier/d*, 43. *miər/d*; 44. *k'wər/d*, 45. *g'wər/d*, 46. *lwər/d*, 47. *p'wər/d*, 48. *giwər/d*, 49. *ngiwər*, 50. *xiwər/d*, 51. *iwər/d*, 52. *diwər/d*, 53. *piwər/d*, 54. *b'iwər/d*, 55. *ngiər/d*, 56. *iər/d*, 57. *tiər/d*, 58. *t'ier/d*, 59. *d'ier/d*, 60. *tsiər/d*, 61. *dz'ier/d*, 62. *ts'ier/d*, 63. *niər/d*, 64. *k'ier/d*, 65. *k'wer/d*, 66. *g'wər/d*, 67. *k'iwər/d*, 68. *g'iwər/d*.

22. 課 23. 踈* 24. 柴 25. 庇 26. 駢* 齒 27. 委 餒 28. 綏
29. 誥 30. 累* 31. 鎧* 32. 機* 33. 衣* 34. 示 35. 視* 嗜 36. 遲*
緝 緝 稚 37. 柅* 膩 38. 二 槓 39. 恣 40. 次 伏 紂 41. 比*
芘* 庇 妣* 42. 坐 紕* 43. 媚 44. 塊 45. 塊 46. 儼* 未 47. 妃* 48.
緯* 49. 魏* 50. 諱 51. 畏 52. 蟹 螯* 53. 誹* 54. 隄* 蜚 荆
扉 扉 菲 55. 詣 56. 醫 57. 抵* 58. 涕* 涕* 薙* 59. 弟 姊* 弟
第 睇* 60. 濟* 霽 61. 濟 濟 濟 濟 濟 濟 62. 妻 63. 尼 泥*
64. 冀 驥 覲 65. 塊 66. 壤 67. 愧 塊 68. 餽

To start with, we have to observe some fundamental facts regarding groups A, B and C.

Firstly: The Arch. *at, ət* finals (A group above, 20 finals) and the Arch. *ad, əd* finals (B group above, 21 finals) have constant and frequent interchange in the hie-sheng characters, a *kāt* being Phonetic in a *kād* and *vice versa*. Examples: 69. *g'ād*: 70. *kāt*; 71. *piwāt*: 72. *piwād*. In my article *Tones in Archaic Chinese* quoted above, I have given 34 examples of this (p. 134 ff.); many more may be culled in my *Grammata Serica Recensa*.

69. 害 70. 割 71. 發 72. 廢

The same groups have constant and frequent intercourse in the rimes of the Archaic poetry: a *piwāt* riming with a *siwād* etc. In the same paper "Tones" I have given 19 examples from *Shī king* and *Yi king*.

Secondly: The Arch. *at*, *ət* finals (A) and the Arch. *ād*, *əd* finals (B) practically never have any interchange with the Arch. finals *ar*⁻, *ar*^ˊ, *ər*⁻, *ər*^ˊ (C group above, 19 finals) in the hie-sheng; that, for instance, a *iat* or a *iəd* is Phonetic in a *iər*⁻ or *iər*^ˊ, or *vice versa* is so rare that it can practically be disregarded (among many hundred hie-sheng belonging to these three classes, the contacts between *-t*, *-d* on the one hand, and *-r*⁻, *-r*^ˊ on the other do not reach a dozen).

Of the same Arch. groups A *at*, *ət* and B *ād*, *əd*, the former never, the latter very rarely has any intercourse with the C *ar*⁻, *ar*^ˊ, *ər*⁻, *ər*^ˊ in the Arch. poetry. In the Shī king there are 4 cases of such contacts (Odes 40, 198, 201, 222).

How then — and this is the salient question — does our D group above (*ar*/*d* etc., 11 finals) behave in the hie-sheng and rimes?

If Malmqvist were right, and these D words were Arch. *ad* (*ād*, *iād*, *iwād*), *əd* (*əd*, *iəd*, *wəd*, *iwəd*, *iəd*, *iəd*, *wəd*, *iwəd*), they would be absolutely congruent with the words of the B group: *ad*, *əd* above. We should then expect:

- a. That the characters chosen by the Arch. scribes for these words of the D group would have Phonetics belonging to the B group in the first place, and secondly to the A group (just as B interchanges with A in the hie-sheng). But they do not.¹⁾
- b. That these same words (according to Malmqvist *ad*[`], *əd*[`] etc.) would rime with *ad*, *əd* words (B) and also *at*, *ət* words (A) in the Archaic poetry. But they do not. There are only two such contacts in the Shī king (Odes 54, 241).

To sum up: the D group has very seldom any interchange, in hie-sheng and rimes, with the B group (Arch. *-d*) and the A group (Arch. *-t*), and this makes it highly improbable that the D group was an Arch. *-d*[`] group, in the way Malmqvist has surmised.

If, on the other hand, my reconstruction is correct, which interprets the D group as Arch. *ar*[`], *ər*[`], in fact identical with the Arch. C group, but for the *k'ü* sheng, we should expect:

- a. That the D-group words would have hie-sheng interchange with the C group (Arch. *ar*⁻, *ar*^ˊ, *ər*⁻, *ər*^ˊ). That is precisely what they constantly have: 次 *ts'ər*[`] (D) is Phonetic in 資 *tsər*⁻ (C), 鬼 *kiwər*^ˊ (C) is Phonetic in 塊 *k'wer*[`] (D) etc.

¹⁾ When we speak of "hie-sheng", we must keep in mind that a hie-sheng fundamentally is a "kia-tsie", phonetic loan character, elucidatingly enlarged by a "Radical". Thus 發 *pjwət* 'to send out' was borrowed (kia-tsie) to write the phonetically similar 廢 *pjwəd* 'to reject': the addition of the "Radical" not preventing that the former was really a kia-tsie, phonetic loan, for the latter. When we speak of the hie-sheng in Shī king or Shu king, we simply mean the kia-tsie employment of what became the "Phonetic" in the compound character — the Radicals were often added at a later date. Thousands of such kia-tsie-hie-sheng, however, were created in early Chou time, as shown both by the said texts and by the bronze inscriptions. On the other hand, in Yin time this kia-tsie-hie-sheng practice had not yet become frequent, as shown by the oracle inscriptions. The hie-sheng (= enlarged kia-tsie), such as we have them in our current form of the Chou-time texts are thus a mirror, from the phonetical point of view, of the Arch. Chinese in early Chou time.

Nearly all the words of group D tabulated above have such hie-sheng connections with group C.¹⁾

b. That the D-group words would rime, in the Archaic poetry, with C-group words (Arch. *ar*-, *ar*′, *ər*-, *ər*′). Such contacts, however, are rare. In the Shī king there are only 8 sure examples: Ode 76 *g'wer*:-*iwər*′, Odes 105 and 239 *tsiər*:-*d'iar*′, Ode 156 *iwər*′:*g'wer*-, Ode 173 *niər*′:*d'iar*′, Ode 212 *siər*:-*d'iar*′, Ode 212 *d'iar*′:*ɣwār*′, Ode 258 *iwər*′:*dz'wər*′.

This scarcity of C:D rimes would be an important phenomenon, if it were not immediately counterbalanced by the fact that the D words almost never rime with the words of the A and B groups; briefly, that it so happens that they rarely figure as rime words at all. But to the meagre list of C:D rimes in the Shī king we can add some testimonies from other Arch. texts. Some examples:

1. Shu: Kao Yao mo *iwər*′:*iwər*′,
2. Yi: Kua 7 *siər*′:*ts'iar*′,
3. Yi: Kua 56 *ts'iar*′:*tsiər*′,
4. Tso: Wen 7 *iwər*′:*g'wer*′,
5. Li: T'an kung *g'wer*′:*iwār*′,
6. Li: Chung yung *kiwər*′:*iwər*′,
7. Li: Ju hing *iwər*′:*kiwər*′,
8. Li: Ju hing *d'iar*′:*siər*′,
9. Ta Tai: Ai kung wen wu yi *kiwər*′:*g'wer*′,
10. Ch'u ts'i: Kiu pien *tsiər*′:*siər*′.

1. 畏:威 2. 尸:次 3. 次:資 4. 威:壤 5. 壤:萎 6. 歸:
畏 7. 威:愧 8. 示:死 9. 歸:壤 10. 濟:死

The behaviour of the words of group D: their keeping apart, in hie-sheng and rimes, from the words in -d and -t (B, A), but intimately connected in hie-sheng (and to a smaller extent in rimes) with the words in Arch. -r-, -r′, makes it quite clear, to my mind, that groups C and D are only one group: C *ar*-, *ar*′, *ər*-, *ər*′, D *ar*′, *ər*′. Thus these *ar*, *ər* finals existing in all three tones, p'ing, shang and k'ü.

This fact is further underlined by cases like 衣 *iar*′ (C) 'clothes': 衣 *iar*′ (D) 'to clothe'; and 妻 *ts'iar*′ (C) 'wife': 妻 *ts'iar*′ (D) 'to give as wife'. In cases like

¹⁾ Even if, for the sake of argument, we were to assume that the bulk of the kia-tsie (later improved into hie-sheng) were already chosen in pre-Chou time, and, on the other hand, that Malmqvist's Proto-Chinese *ad*-, *ad*′, *əd*-, *əd*′ for group C, and *ad*′, *əd*′ for group D were right, it would still be inexplicable why the *ad*′, *əd*′ of group D had whole-sale kia-tsie (hie-sheng) connections with the supposed Proto-Chinese *ad*-, *ad*′, *əd*-, *əd*′ of group C, but never with the *ad*′, *əd*′ of group B with which, according to Malmqvist, they would have been congruent. Obviously his theory should demand that the assumed pre-Chou creators of kia-tsie would have selected, for the words of group D, if they were *ad*′, *əd*′, characters from the *ad*′, *əd*′ of group B.

these Malmqvist's theory would force us to pose Arch. Ch. *·iər* 'clothes': *·iəd̥* 'to clothe' — the early Chou scribes would hardly have used one and the same character for both.

Even more important is another phenomenon, which Malmqvist has left aside entirely: there is, besides the Arch. *at*, *ad*, *ar* and the *ət*, *əd*, *ər* categories, an Arch. category *et* (and *ēt*) *ed̥* (and *ēd̥*). Here again, the *d* words regularly have the *k'ü sheng* (e. g. 必 *piēt*: 祓 *piēd̥*). There are 12 such examples in my "Tones" pp. 154, 155, other examples can be culled in the *Grammata Serica Recensa*. In this case there exists no corresponding *-r* category (an isolated case 眞 *iēr* is quite exceptional), which could be the *p'ing sheng* counterpart to the *k'ü sheng* type of class *ed̥* (*ēd̥*).

The strikingly independent nature of the large class of words ending in Arch. *-r* (their refusal to go together with *-t* and *-d* words in *hie-sheng* and *rimes*) makes it natural, instead of trying to force them in under a *-d* heading in Proto-Chinese, to look for their counterparts elsewhere in cognate languages. In Tibetan there are, of course, very extensive classes of words ending in *-r*. But we might take one step further. Even among the numerous Tibetan *-s* words there may exist counterparts to Arch. Chinese *-r* words. It should be remembered that Indo-European final *-s* sometimes has become *-r* in Germanic languages (Ieur. sing. nom. **sūnus*, Gothic *sunus*; Anc. Icelandic *sunr*; Ieur. acc. plur. *wlquōs*, Gothic *wulfōs*; A. Icel. *ulfar*; etc.), and it is tempting to assume something similar in Chinese. It is not my intention to submit my materials in this respect in this short paper, I will only adduce two examples:

Tibetan *g-nyis* 'two': Arch. Chin. *·iər* 'two' (二);

Tibetan *bras* 'rice': Arch. Chin. *miər* 'rice' (米) (*bras* < **mras*, as Greek *brotos* < **mrotos* 'mortal'; for the vocalism cf. Tibetan *k'rab*: 'to weep': Arch. Chin. *k'liəp* 'to weep' (泣); Tib. *drags* 'much': Arch. Chin. *d'iəg* 'to accumulate' (積).

Be this as it may — I hope to revert to this question soon — there still remains the riddle of the all-dominating *k'ü sheng* in group B: *ad̥*, *əd̥*; and, as stated above, also in the corresponding category *ed̥*. If Malmqvist's theory, which would beautifully explain these *k'ü sheng*, is difficult to accept, because it entails an unacceptable reconstruction for the words tabulated in group D, how are we then to explain these constant *k'ü sheng* in all the *-d* categories?

The simplest explanation would seem to be to say that the *k'ü sheng* here is not primary but a secondary phenomenon: in words ending in Arch. *-d* the final *-d* had depressed the word melody to a lower pitch towards the end: *ad̥*, *əd̥*, *ed̥*.

Against this could be objected that we should then expect a corresponding phenomenon in the velar class; all final *-g* ought to have caused a similar depression of the tone: *ag̥*, *əg̥*, *og̥* etc. Yet we have hundreds of words with Arch. *āg*, *āg̣*, *əg*, *əg̣*, *ōg*, *ōg̣* etc.

Here again, it could be argued that words with the front final *-d* need not have had a history parallel to that of words with the back final *-g*. But that would be

a weak defense. In reality matters were probably much more complicated. A spontaneous evolution of all $-d^-$, $-d' > d^-$ is improbable for weighty reasons.

In the velar class there is an important series of cases with a stem variation $k \sim g$. In all these cases the $-g$ variants had Anc. Chin. $k'ü$ sheng, and in my "Tones" I gave reasons for concluding that this $k'ü$ sheng obtained already in Arch. Chinese and that it was then, as later, a falling inflexion. There are, for instance, 1. $d'ák$ 'to measure': $d'ág$ 'a measure'; 2. $ák$ 'bad': $ág$ 'to find bad, to hate'; 3. $p'ük$ 'happiness': $p'üg$ 'wealth'; 4. $d'iek$ 'to change': $d'ieg$ '(changeable:) easy'; 5. $b'iók$ 'to return': $b'ióg$ '(returningly:) again', etc. There are a score of safe examples of this kind. Here the $k'ü$ sheng, which contrasts with the $ióg$, $ióg$ etc. in a great many other words, is certainly not due to a spontaneous change but is a feature connected with the stem variation.

Again, there are in Arch. Chinese a considerable number of cases in which $-k$ and $-g$ interchange, as two variants of the same word, for instance: 6. $kók$ and $kóg$ 'to announce'; 7. $ńiók$ and $ńióg$ 'meat'; 8. $g'ük$ and $g'üg$ 'park'; 9. $d'iak$ and $d'iäg$ 'to shoot'; 10. $g'wék$ and $g'wég$ 'to delineate, to draw'. Here again, as in the preceding category, the $k'ü$ sheng is a feature in the stem variation.

If we now revert to the $-d$ groups, we find exact parallels to both these phenomena:

On the one hand, we have: 11. $p'iwát$ 'to throw out': 12. $p'iwäd$ 'to throw away'; 13. $kiet$ 'to tie': 14. $kied$ 'hair-knot'; 15. $d'iwat$ 'to rejoice': 16. $d'wäd$ 'glad'; 17. $t'wát$ 'to peel off, take off': 18. $t'wäd$ 'exuviae of reptiles'; 19. $s'iwat$ 'to speak': $s'iwäd$ 'to exhort'; 20. $i'iet$ 'substance': $i'ied$ 'gage, hostage'; 21. $i'iwat$ 'to go out': $i'iwäd$ 'to bring out'; 22. $dz'iwat$ 'to break': 23. $ts'iwad$ 'brittle'; 24. $kát$ 'to cut': 25. $käd$ 'to castrate': 26. $sät$ 'to kill': $säd$ '(to truncate:) to reduce' etc.

On the other hand, we have: 27. $sl'iwat$ and $sl'iwäd$ 'to follow'; 28. iet and ied 'to choke'; 29. $b'wát$ and $b'wäd$ 'sacrifice to the Road gods'; 30. $i'iat$ and $i'iad$ 'bright'; 31. $t'iwat$ and $t'iwad$ 'to sew'; 32. $ts'iwat$ and $ts'iwad$ 'sheaf'; 33. $p'iet$ and $p'ied$ 'lance shaft'; 34. $piet$ and $pied$ 'box-staple of a lock'; 35. $b'wat$ and $b'wäd$ 'comet'; 36. $dz'iet$ and $dz'ied$ 'jealous'; etc.

1. 度 2. 惡 3. 富 4. 易 5. 復 6. 告 7. 肉 8. 圃
9. 射 10. 畫 11. 發 12. 廢 13. 結 14. 髻 15. 悅 16. 兑
17. 脱 18. 蛻 19. 說 20. 質 21. 出 22. 絕 23. 脬 24. 割
25. 轄 26. 殺 27. 率 28. 噎 29. 輶 30. 晰 31. 掇 32.
莖 33. 杪 34. 閉 35. 孛 36. 嫉

The parallelism with the $-g$ groups is here conclusive: the $k'ü$ sheng in the $-g$, connected with the stem variation, is a morphological feature, not a result of a spontaneous phonetic evolution; and the same must be true of the $-d$, due to stem variation, in our $-d$ groups.

The B group (Arch. -d` class) is not a very comprehensive one. In the *Grammata Serica Recensa* there are some 300 characters under which we find -d` forms (in reality the number of -d words is slightly larger, since in a few cases one character stands for two or several independent words), and out of these 300 cases no less than about 70 belong to the afore-mentioned categories of stem variation, with a k'ü sheng of a morphological character.

What about the other ones?

Since we have witnessed that it is vain to look in the -r class (group C) for the Proto-Chinese categories -d-, -d', to be expected but missing in Arch. Chinese, we might be tempted to believe that they are hidden among the remaining 230 cases of Arch. -d`, for it certainly looks suspicious that we have nearly exclusively Arch. -d` and no -d- (besides -g-) in the same language.

In point of principle, it is true, we need not necessarily expect that every square in a diagram of combined initials and finals in Arch. Chinese can really be filled in with Arch. words. We have, on the one hand, *kân, tân, tsân, lân, nân* (in great numbers), but we have only *kən, nən*; we have *kjət, tsjət*, and we have *kwət, tswət, b'wət*, and we have *kjwət, tsjwət, ljwət, pjwət*, but we have no *kət, tsət, lət, pət*, we have *əng, ək, əg*, and we have *ōng, ôk, ôg*, but we have only *ok, og*, no *ong*. And so forth. It would thus be perfectly permissible to let matters rest with the fact that there are some 300 -d` but no Arch. -d-, -d', all, of course, imputable to the earlier history of the language, which we cannot reach at present.

But if we should suspect that some Proto-Chinese -d-, -d' skulk in the Arch. -d' category, it is easy to realize how this may have happened.

Supposing that — out of the 300 and some cases — the original cases of -d- and -d' were few, just as the *ən* and *ət* groups above, and on the other hand, that there existed a considerable group of original -d`, to which, then, was added the powerful group of 70 -d` of morphological origin, the k'ü sheng group would be overpowering and engulfed the -d- and -d' through *analogy*. The wholesale -d` (with k'ü sheng) in Arch. Chinese would then be due, not to a spontaneous phonetic change: all -d>-d`, but, in the case of original -d-, -d', to an analogical development, -d-, -d' becoming -d` through the strong analogical influence of a powerful -d` group.

Why, then, were matters not the same in the -g groups? For the simple reason that in those groups we have hundreds and hundreds of -g-, -g': *ôg-, -ôg'* etc., much too strong groups to succumb to the analogical influence of the -g` group.

STUDIES IN WESTERN MANDARIN PHONOLOGY

BY

GÖRAN MALMQVIST

INTRODUCTION

The aim of this article is to describe the phonological features of the Sich'uanese dialects spoken in Ch'engtu, Loshan and Omei. The material on which this study has been based was collected during field work in Sich'uan during 1949 and 1950.

Ch'engtu, the provincial capital of the Sich'uan province, is situated on the great Sich'uanese plain. The city has excellent road and water-way connections with other parts of the province and with the neighbouring provinces. The main eastern road, Ch'engtu—Neikiang—Ch'ungk'ing (450 road kilometers), is the commercially most important road of the province. The main northern road leads to Ningk'iang in the south-western part of the Shensi province (447 kilometers). Before the completion, in 1952, of the Ch'engtu—Ch'ungk'ing railway, travellers usually followed this road to Paoki in western Shensi, from where there are excellent rail connections with Hank'ou. A western road leads to Yaan in the former province of Sik'ang (152 kilometers). From Yaan there is a good road connection with the province of Yünnan.

At the time of the investigation Ch'engtu had about 500 000 inhabitants. The census undertaken by the Ch'engtu City Council in 1942 counted 95 373 families and 400 319 persons. The city is the most important educational centre of the province and had, in 1950, two universities and a great number of secondary schools.

Loshan is situated on an air-line distance of 125 kilometers SSW of Ch'engtu. The road connections with Ch'engtu are fairly good; the main road Loshan—Meishan—Ch'engtu measures 162 kilometers. Situated on the bank of the Min river, a tributary to the Yangtsi river, Loshan has excellent water-way connections with Ch'ungk'ing. At the time of the investigation Loshan had about 60 000 inhabitants and constituted the main educational centre of this part of the province.

The small town of Omei is situated 25 road kilometers to the west of Loshan. It was the chief town of the Omei County District and is one of the main market towns of this part of Sich'uan. At the time of the investigation there was no high school in Omei and middle school students, who wished to continue their studies, had to do so in Loshan. My investigation of the Omei dialect was undertaken in the immediate neighbourhood of Pao Kuo Si, a Buddhist

monastery situated at the foot of Mount Omei, about six kilometers SSW of the town itself.

Mount Omei was one of the greatest Buddhist centres of China and a great number of pilgrims from all parts of China used to visit the mountain during the religious festivals. During the Sino-Japanese war many refugee students from the North were lodged in the larger monasteries on the mountain. Apart from these occasional contacts the farming population of the rich country-side appeared to be fairly isolated.

My main informant for the Ch'engt'u dialect was a 22 years old university student. His family belonged to the middle class and had been living in Ch'engt'u for several generations. He himself had spent most of his time at school and with his family.

My main Loshan informant was 29 years of age and temporarily employed as a primary school teacher. His family belonged to the lower middle class and he himself took great pride in belonging to an old Loshan family. He had attended middle school in Loshan and also spent one year at an agricultural college in Ch'engt'u. Apart from this sojourn in Ch'engt'u all his life had been spent in Loshan.

Two main informants were used for the Omei dialect. One was a 40 years old farmer living and working in a farm just outside the monastery; the other informant was a 20 years old monk living in the monastery. The farmer, who had no schooling, was a bright and keen informant. His travels had not extended beyond Loshan. The young monk was born in the town of Omei and had been sent to the monastery as a child. All his life had been spent in various monasteries on Mount Omei. The fact that some of the monks in Pao Kuo Si came from different parts of S'ich'uan and spoke slightly different dialects did not seem to have affected his speech.

My main work with these informants consisted in working out complete syllabaries and phonemic transcriptions for each dialect. In order to facilitate the comparison between the dialects the original phonemic transcription has been somewhat modified in this article. Extensive wire recordings were made of the speech of my Ch'engt'u and Loshan informants. These recordings have later been used to check my earlier notations.

The dialects of Ch'engt'u, Loshan and Omei are abbreviated as Ch, L and O respectively. Sequences such as /er:/l:/er/ are to be read as 'Ch/er/ corresponds to L/l/ and to O/er/'. Whenever the three dialects agree only one form is given.

All Ancient Chinese forms occurring in the summary description of the historic development of the dialects are given in B. Karlgren's notation.¹⁾

A short glossary of forms quoted in various compilations of idiomatic S'ich'uanese expressions and a list of forms with more than one pronunciation (below abbreviated as Glossary and List respectively) have been added at the end of the article.

¹⁾ B. Karlgren, *Grammata Serica Recensa*, The Museum of Far Eastern Antiquities, Bulletin 29, Stockholm 1957.

PHONETIC NOTATION

With a few exceptions to be noted below the phonetic symbols used for consonants and vowels are those of the International Phonetic Alphabet. Phonetic symbols are placed within square brackets.

The following diacritic marks are employed:

- [^ː] denotes emphatic stress;
- [^ˈ] denotes strong stress; weak stress is denoted by the presence of a tone mark and zero stress by the absence of a tone mark.
- [_l] placed before a symbol denotes that the sound is syllabic;
- [_o] placed before a symbol denotes devoicing;
- [[˜]] placed above a symbol denotes nasalization;
- [_ɹ] placed under a symbol means 'closer than IPA cardinal';
- [_ɻ] placed after a symbol means 'more open than IPA cardinal';
- [[˘]] placed between two symbols denotes synchronic articulation;
- [^ʰ] placed after a symbol denotes aspiration;
- [^{ː̥}] placed above a symbol denotes shortness.

For the phonetic notation of the pitch and the form of tones I follow the system proposed by Y. R. Chao.¹⁾ The pitch range of each dialect is measured on the scale 5-4-3-2-1, denoting high, half-high, mid-high, half-low and low pitch respectively. The form of falling-rising tones is indicated by three figures, of which the first denotes the initial pitch, the second the pitch at the turning-point of the form and the last figure the final pitch of the tone. With tones other than circumflex tones two figures are employed to denote the initial and the final pitch of the tone. One figure is employed to denote the pitch of unstressed and atonal syllables. Examples:

- [55] denotes a level high tone;
- [45] denotes a tone rising from half-high to high;
- [213] denotes a tone falling from half-low to low and then rising to mid-high.

THE SYSTEMATIC TRANSCRIPTION

In the present study the principles of phonemic analysis have not been adhered to in all instances and the systematic transcription accounts for certain non-distinctive features. It is felt that this compromise between a phonemic and a non-phonemic transcription will facilitate the comparison between the dialects. Alternatively possibly phonemic reductions will be noted in each instance.

Letters in the systematic transcription are placed within slanting lines.

The five tones recognized on the systematic level are denoted by the following diacritic tone marks: /[˥]/, /^{˨˩˥}/, /^{˨˩˨}/, /^{˨˩˨˥}/ and /^{˨˩˨˨˥}/. The presence of a tone mark also serves to indicate weak stress; absence of a tone mark indicates zero stress.

¹⁾ Chao Yuan Ren and Yang Lien Sheng, *Concise Dictionary of Spoken Chinese*, Harvard University Press, 1947., p. XV.

SYLLABIC STRUCTURE

The Sīch'uanese syllable contains four segmental terms and a tone. The four segmental terms are 1. an initial, 2. a medial, 3. a syllabic and 4. an ending. The 2nd, the 3rd and the 4th terms constitute together the final of the syllable.

Certain types of syllables contain one, two or three zero terms. In Ch and O syllables with three zero terms always contain a syllabic vowel, whereas in L there is one case of syllabic initial: /l/ [l] or [d,l].

Finals without endings are termed simple finals. All other finals are termed compound finals. The L syllable /l/, which corresponds to Ch and O /er/, has here been treated as a syllable containing a compound final. An alternative phonemic treatment of L /l/ will be discussed below.

Initials.

Ch L O

/p	ph	m	f/
/t	th	l/	
/ts	tsh	s	z/
/k	kh	ng	h/
/zero/			

Medials.

Ch L O

/i iu u/

Simple finals.

1. syllabics.

Ch	L	O
/i iu u/	/i iu u/	/i iu u/
/ī/	/ī/	/ī/
/e a o/	/a o/	/e a o/

2. combinations of medials and syllabics.

Ch	L	O
/ie ia io/	/ia/	/ie ia io/
/iue/		/iue/
/ue ua/	/ua/	/ua/

Endings.

Ch	L	O
/i u n ng r/	/i u n ng/	/i u n ng r/

Compound finals.

Ch and O

/ei	ai	ou	au	en	an	ong	ang	er/
	/iai	iou	iau	in	ian	iong	iang	ier/
				/iun	iuán/			iuér/
/uei	uai/			/uen	uan	uóng	uang	uer/

L

/ei	ai	ou	au	en	an	ong	ang	l/
	/iai	iou	iau	ing	ian	iong	iang/	
				/iung	iuán/			
/uei	uai/			/uen	uan	uóng	uang/	

Tones.

Ch	L	O
Tone 1. / - / [45]	[55]	[44]
Tone 2. / \ / [21]	[11]	[11]
Tone 3. / ^ / [53]	[43]	[43]
Tone 4. / ˇ / [213]	[213]	[213]
Tone 5. / ˘ / —	[44]	[55]

PHONETIC REALIZATION OF INITIALS

/p ph m f/.

- /p/ [ɓ]. Voicing may occur in intravocalic position, as in Ch /|pà-pà/ [ɓaba] 'father', and as a sandhi feature, as in Ch /sǎn 'pǔ/ [sǎm bu] 'to take a walk' and /'liǎng-pâ/ [liǎŋ˥mba] 'two handfuls'.
- /ph/ [pɕ], [px] and [pʰ]. [pɕ] is found before medial and syllabic /i/, as in Ch /phl/ [pɕi] 'skin', /phn/ [pɕin] 'bottle' and /phià/ [pɕia] 'bang, crash'. [px] is found in /pha phang pho phong/. The velar friction is especially prominent in L.
- /m/ Ch [m], L and O [m] and [mb]. L and O [m] occurs in /ma mau men man mang mian/, e.g. L /mā/ [ma] 'mother' and O /mèn/ [mən] 'door'; L and O [mb] occurs elsewhere, as in L /mǎ/ [mbə] 'ink' and O /mìn/ [mbin] 'people'.
- /f/ [f]. In L voiced labiodental friction is frequently present in the last phase of the initial. An unvoiced bilabial fricative, [ɸ], has occasionally been recorded in L /fu/ and /fei/.

/t th l/.

- /t/ [ɗ].
- /th/ Ch [tʰ], L and O [tʰ] and [tx]. L and O [tx] is found in /tha thang tho thong/. The velar friction is especially prominent in L.

/l/ is an alveolar lateral/nasal variphone: [l/d] or [ld/nd]. The variphonic nature of this initial has previously been observed by Yang Shi-feng.¹⁾ [ld/nd] is found in the syllables /li liu lu/ and, in L, also before medial /i/, as in /lian/ [ldiɛ] or [ndiɛ]. [l/n] is found elsewhere. L /l/ occurs as a complete syllable and is then realized as a voiced and labialized alveolar lateral, sometimes preceded by a voiced alveolar stop: [ɹ,l] or [d,l].

/ts tsh s z/.

These four initials are realized as dental affricates and fricatives respectively: [ts ts' s z]. In /ts/ voice may be present in the last phase of the affricate.

/k kh ng h/.

Ch, L and O /k kh h/ and Ch /ng/ comprise palatal variants occurring before medial and syllabic /i/ and /iu/ and velar variants occurring elsewhere.

/k/ [tɕ] and [ɔg]. The velar variant may occasionally be voiced in intravocalic position, as in Ch /,kō-kō/ [ɔgɔgɔ] 'elder brother' and in sandhi, as in Ch /khǎn-ko/ [k'angɔ] 'have seen'.

/kh/ [tɕ', [k'] and [kx]. [kx] is found in /kha khang kho khong/. The velar friction is especially prominent in L.

/ng/ Ch [ɲ], [ŋ] and [ŋg]; L and O [ŋg]. Ch [ɲ] is found before medial and syllabic /i/ and /iu/; Ch [ŋg] is found in /ngô/ [ŋgɔ] 'I'. Ch [ŋ] is found elsewhere. L and O /ng/ does not occur before /i/ and /iu/. The velar stop is especially prominent in L.

/h/ Ch [h̥], [x], [ʔ] and [h]; L and O [x]. Ch [h̥] is found before /e/ and /en/, as in /hè/ [h̥ɛ] 'black'; Ch [h] and [ʔ] have only been recorded in the interrogative sentence suffix /ka-'haʔ/ [ɔgaha], [ɔga'a] 'isn't it?'; Ch [x] is found elsewhere.

/zero/ is identified as the non-occurrence of any of the initials described above. In the syllables /i/, /iu/ and /u/ this initial is realized as initial palatal, labio-palatal and labio-dental friction. With tone 2 the same syllables are normally accompanied by simultaneous palatal, labio-palatal and bilabial friction. Voiced velar friction, either initial or simultaneous, has been observed in Ch, L and O /o/ [ɣɔ], [ɣɔ̃] and in L /a/ and /ǔ/ [ɣa], [ɣã], [ɣuω], [uɣ̃ω]. After /zero/ the medials /i/, /iu/ and /u/ are realized as close and consonantal palatal, labio-palatal and labio-velar glides respectively.

THE SIMPLE FINALS OF THE CH'ENGTU DIALECT

/i/ [i]. With tone 1 [45] this final is slightly diphthongal and ends in fairly prominent palatal friction. With tone 2 [21] there is frequently simultaneous palatal friction, especially after /zero/.

¹⁾ Yang Shi-feng, On the Phonetics of Chengtu Dialect, Academia Sinica Bulletin of the Institute of History and Philology, vol. 23., part 1., 1951., p. 290.

- /iu/ [y]. The lip-rounding sometimes tends to become relaxed before the end of the final. This feature appears with some speakers to be more prominent with tone 3 [53]: /iû/ [yi] 'rain'. With tone 1 [45] the final is slightly diphthongal and ends in fairly prominent labio-palatal friction. With tone 2 [21] there is frequently simultaneous labio-palatal friction, especially after /zero/.
- /u/ [u]. With tone 1 [45] this final is slightly diphthongal: [uw]. With tone 2 [21] simultaneous bilabial friction has frequently been observed, especially prominent after /f/ and /zero/. With tones other than tone 2 the syllable /u/ is normally realized as [vu]. In unstressed syllables the vowel is more open: [ω].
- /i/ [ɿ]. This final is slightly more open and less retracted than the corresponding Pekinese final. The term 'apical' vowel, which is normally used in the description of this sound, does not suit Sich'uanese, as the tip of the tongue is kept low and actually touches the lower teeth throughout the production of the vowel. In unstressed syllables /i/ is intermediate between [e] and [ə].
- /e/ [ɛ]. With some speakers this vowel is slightly closer than cardinal [ɛ].
- /a/ [a]. In unstressed syllables this final has been recorded as intermediate between [ɐ] and [ə].
- /o/ is intermediate between [o] and [ɔ]. In unstressed syllables the vowel is slightly more open, [ɔ].
- /ie/ [ie]. After /zero/ the main vowel is slightly more open. With some speakers this final has been recorded as [iɛ].
- /iue/ [ye].
- /ue/ [uɛ].
- /ia/ [ia].
- /ua/ [uA].
- /io/ [io]. The lip-rounding is normally slightly anticipated in the medial.

In strongly stressed syllables accompanied by tone 4 [213] a glottal stop frequently occurs at the turning-point of the falling-rising form: /'tsě/ [tsɛʔɛ]. The occurrence of [ʔ] in these simple finals is clearly incidental to the falling-rising form of tone 4. The same feature has been found in certain interjections accompanied by a falling-rising intonation contour: /'se/ [sɛʔɛ] 'certainly', /o'io/ [ɔjɔʔɔ] 'good heaven'. The same phenomenon may be found also in Swedish, where [jaʔa] with a falling-rising intonation contour occurs as a variant of /ja/ [ja] 'yes'.

In these cases we have to accept a two-syllabic sequence as a conditioned variant of a vowel phoneme.¹⁾

¹⁾ Cf Chao Yuan Ren, *The Non-uniqueness of Phonemic Solutions of Phonetic Systems*. Academia Sinica Bulletin of the Institute of History and Philology, vol. 4., part 4., 1934., p. 370.

THE SIMPLE FINALS OF THE LOSHAN DIALECT

Each of the simple finals in the Loshan dialect possesses a variant conditioned by tone 5. These variants are all short. In order not to complicate the comparison between the dialects this non-distinctive shortness of tone 5 finals has not been noted in the phonetic notation.

- /i/ [i]. After /zero/ there is simultaneous palatal friction running through the final.
 /ɿ/ [ɿ].
 /iu/ [y]. After /zero/ there is simultaneous labio-palatal friction running through the final.
 /iũ/ [yũ]. [ũ] represents a vowel, which is slightly more open and slightly more retracted than Swedish short [u].
 /u/ [u]. After /f/ and /zero/ there is frequently simultaneous bilabial friction running through the final.
 /ũ/ [ω] is found after the initials /p ph m/;
 [uω] is found elsewhere. After /zero/ there is normally slight velar friction.
 /ĩ/ [ɿ]. In unstressed syllables this final is intermediate between [e] and [ə].
 /ɿ/ [ə].
 /a/ [a]. In strongly stressed syllables simultaneous velar friction has frequently been observed: [γ[~]a].
 /ǣ/ [ɐ].
 /o/ [ɔ]. After /h/ the vowel is considerably more open: /ho/ [xɔ].
 /ɔ/ [ə]. A half-open, slightly rounded central vowel.
 /ia/ [ia].
 /iǣ/ [iɐ].
 /ua/ [ua].
 /uǣ/ [uɐ].

THE SIMPLE FINALS OF THE OMEI DIALECT

Only the simple finals /a ia ua/ possess variants conditioned by tone 5.

/i/	/iu/	/u/	[i]	[y]	[u]
	/ĩ/			[ɿ]	
/e/	/a/	/o/	[ɛ]	[A]	[ɔ]
/ie/	/ia/	/io/	[ie]	[ia]	[io]
/iue/	/ua/		[ye]	[ua]	

In /io/ the lip-rounding is normally slightly anticipated in the medial.

The three tone 5 finals /a ia ua/ are realized as [æ iæ uæ].

In unstressed syllables /e/ is intermediate between [e] and [ə]; unstressed /a/ is intermediate between [ɐ] and [ə].

PHONETIC REALIZATION OF ENDINGS

/-i/ denotes the second part of a diphthong moving towards a high front position.

In Ch the following cases of tonally conditioned variation have been observed: in strongly stressed syllables accompanied by tone 1 [45] the ending is realized as prominent palatal friction and the syllabic quantity appears to be progressively distributed: /äi/ [aj:], /ëi/ [ej:].

With tone 2 [21] and tone 3 [53] the ending is considerably more open and the syllabic quantity appears to be regressively distributed: /äi/ [ai], /ëi/ [ei].

In these instances features of form, intensity and distribution of quantity within the syllable appear to be correlated in the following way: rising form — crescendo intensity — progressive distribution of quantity and falling form — diminuendo intensity — regressive distribution of quantity.

I have not been able to ascertain the occurrence of similar conditioned features in L and O /-i/.

/-u/ denotes the second part of a diphthong moving towards a high back position. Such correlations between features of form, intensity and intrasyllabic quantity distribution as were described sub /-i/ above have been observed in syllables accompanied by strong or emphatic stress.

/-n/ has the following realizations:

In Ch /en uen in/ and /iun/ the ending is realized as a voiced alveolar nasal. The following tonally conditioned variation has been observed: /ēn/ [ən:], /èn/ [əñ], /ên/ [əñ] and /ěn/ [ən:].

Ch /an ian iuan uan/ are subjected to the following conditioned variation: with tone 4 the ending is realized as nasalization of the preceding vowel and a fully articulated [n]; with tones other than tone 4 the ending is realized as nasalization of the preceding vowel and a weakly articulated [n], during the production of which the tongue is raised towards but not reaching the position of [n]: /ān/ [ãⁿ].

L /en/ and /uen/ are realized as [ən] and [uən]. L /an ian iuan uan/ are realized as [a ia ya ua] and we therefore have to accept [zero] as a conditioned variant of L /-n/.

O /en uen in iun/ are realized as [ən uən in yin]. In O /an ian iuan uan/ the ending is realized as complete nasalization of the preceding vowel: /an/ [ã̃].

Certain sandhi modifications occur in the junction of Ch /-n/ and the velar initial of a following syllable: /'khǎn-ko/ [k'angɔ] 'did once look at'; /'tên ngo/ [təŋngɔ] 'wait for me'; /'lên-hǎn/ [ləŋxǎn] 'cold perspiration'. The sandhi forms [ŋ] and [ŋ̃m] have been found before the initial /zero/ followed by medial /u/, as in /'in-ùen/ [iŋuən] or [iŋ̃muən] 'English'.

The sandhi form [m] is found before bilabial consonants, as in /sǎn 'pǔ/

[sām ɔ bu] or [sām bu] 'to take a walk'; /'sān-pè/ [sām ɔ bɛ] 'three hundred'; /'sēn-phǎ/ [səmp'a] 'to be terribly afraid' and /'sān mǐ/ [sām mɛi] 'third younger sister'.

Before /t th l/ a weakly articulated Ch /-n/ is pronounced with complete closure, as in /'sān-tín/ [sān ɔ dín] 'mountain top' and /hên-la/ [hənnə] 'extremely'.

/-ng/ is in all three dialects a voiced velar nasal, [ŋ]. In Ch the following cases of tonally conditioned variation has been observed: /āng/ [aŋ:], /àng/ [aŋ~], /âng/ [aŋ~] and /ǎng/ [aŋ:].

The sandhi form [ŋ~m] has been found before bilabial consonants, as in /'liāng-pâ/ [liāŋ~mba] 'two handfuls'.

/-r/ occurs only in Ch and O and is there realized as retroflexion of the preceding vowel: /er/ [ɐʳ].

PHONETIC REALIZATION OF COMPOUND FINALS

Such cases of tonally conditioned variation as have been described above will not be noted in the following table.

Final	conditioning feature	Ch	L	O
/ei/		[ɛi]	[ɛ, i]	[ɛi]
/ai/		[ai]	[ai]	[a, i]
/ou/	tones 1, 2, 3	[əu]	[əu]	[əu]
	tone 4	[ɤu]	[əu]	[əu]
/au/		[Au]	[Au]	[Au]
/en/		[ən]	[ən]	[ən]
/an/	tones 1, 2, 3	[ān]	[a]	[ā]
	tone 4	[ān]	[a]	[ā]
/ong/	after /p ph m f zero/	[ɔŋ]	[ɔŋ]	[ɔŋ]
	elsewhere	[oŋ]	[oŋ]	[oŋ]
/ang/		[aŋ]	[aŋ]	[aŋ]
/er/		[ɐʳ]	—	[ɐʳ]
/l/		—	[,l], [d,l]	—
/iai/		[iai]	[iai]	[ia, i]
/iou/	tones 1, 2, 3	[iu]	[iəu]	[iu]
	tone 4	[iəu]	[iəu]	[iəu]
/iau/		[iAu]	[iAu]	[iAu]
/ian/	tones 1, 2, 3	[iɛ̃n]	[iɛ]	[iɛ̃]
	tone 4	[iɛ̃n]	[iɛ]	[iɛ̃]
/in/		[in]	—	[in]
/ing/		—	[iŋ]	—
/iong/		[iuŋ]	[iuŋ]	[iuŋ]
/iang/		[iaŋ]	[iaŋ]	[iaŋ]
/uei/	tones 1, 2, 3	[ui]	[uɛ, i]	[ui]
	tone 4	[uei]	[uɛ, i]	[uei]
/uai/		[uai]	[uai]	[ua, i]
/uen/	after /zero/	[uən]	[uən]	[uən]
	elsewhere	[uən]	[uən]	[uən]

Final	conditioning feature	Ch	L	O
/uan/	tones 1, 2, 3	[uā ⁿ]	[ua]	[uā ₁]
	tone 4	[uān]	[ua]	[uā ₂]
/uong		[uəŋ]	[uəŋ]	[uəŋ]
/uang/		[uAŋ]	[uAŋ]	[uAŋ]
/iun/		[y ¹ n]	—	[y ¹ n]
/iung/		—	[yiŋ]	—
/iuan/	tones 1, 2, 3	[yī ⁿ]	[yɛ]	[yī]
	tone 4	[yīn]	[yɛ]	[yī]

CH AND O /er ier iuer uer/ AND L /l/

In syllables with /zero/ initial Ch and O /er/ is a morphologically simple form. In all other cases Ch and O /er ier iuer uer/ represent fusions of various finals and a non-syllabic suffix /r/.

The phonetic realization of a fusion of one of the finals /o u ong/ and the non-syllabic suffix is conditioned by the initial: with one of the initials /p ph m f/ the fusion is realized as /er/, with /zero/ initial as /uer/. With initials other than these we find either /er/ or /uer/. The latter form is normally found in second constituents of reduplicated expressions:

1. /'khǔ-khǔer/ 'childrens' pants; small pants';
2. /'tshâ-tshâ-khěr/ 'childrens' pants, open behind'.
3. /'thǔ-tǔer/ 'rabbit; toy rabbit';
4. /'thěr-zǒu/ 'rabbit meat'.
5. /'tǒng-tǔěr/ 'small cave; cavity';
6. /'sân-těr/ 'mountain cave'.
7. /'hò-huěr/ 'small box';
8. /'hiâu-hèr/ 'small box'.

With finals other than /o u ong/ the phonetic realization may be stated as follows:

/er/ is a fusion of one of the finals /ī e a ei ai ou au en an ang/ and the suffix /r/.

/ier/ is a fusion of one of the finals /i/ or /in/ or one of the finals containing medial /i/ and the suffix /r/.

/iuer/ is a fusion of the final /iuan/ and /r/.

/uer/ is a fusion of finals containing medial /u/ and /r/.

The corresponding L form /l/ is always syllabic.

9. /'l-tsī/ 'son'; 10. /kôu-l/ 'dog'; 11. /'khiũ-khiũ-l/ 'small bird'.

1. 褲褲兒 2. 叔叔褲兒 3. 兔兔兒 4. 兔肉兒
5. 洞洞兒 6. 山洞兒 7. 金金兒 8. 小盒兒
9. 兒子 10. 狗兒 11. 雀雀兒

TONES

All stressed syllables — with the exception of interjections — are accompanied by a tone, a suprasegmental feature which may be described with reference to pitch, form and intensity.

Pitch will be measured on a scale ranging from 5 (the highest pitch in the dialect) to 1 (the lowest pitch in the dialect). This scale is employed to describe the relative intervals between the tones.

Form is identified as a pitch movement or a contour. The following forms have been found: falling, rising, neither falling nor rising, i.e. level, and both falling and rising, i.e. circumflex.

By intensity is here implied the articulatory force applied to the articulation of a syllable. The following intensity manifestations have been found: diminuendo, crescendo, neither diminuendo nor crescendo, i.e. level intensity, and both diminuendo and crescendo.

Intensity manifestations have only been found in syllables with strong and emphatic stress. Forms and intensity manifestations are correlated: crescendo intensity occurs with rising forms, diminuendo intensity with falling forms, level intensity with level forms and, finally, diminuendo-crescendo intensity with falling-rising forms, as in /tǎ/ [da'a] 'big'. The same correlation of form and intensity has been found also in other languages.¹⁾

The intensity manifestations of Northern Mandarin have been observed and shortly described by M. Swadesh and C. Hockett.²⁾

After the conclusion of the present study my attention was drawn to a study by M. Romportl.³⁾ Romportl bases himself on the observations made by Swadesh: 'Die Ausbreitung der Intensität innerhalb des Tons wurde gut von Swadesh beschrieben. Im ersten Ton ist die Betonung gleichmässig ausgebreitet, der zweite wird stärker im zweiten Teil akzentuiert, im dritten Ton ist die Intensität ziemlich gleichmässig mit einer Schwachung am Ende, der vierte Ton ist stärker am Anfang. Ich bin der Meinung, dass diese Ausbreitung der Stärke innerhalb der Silbe nur sekundär ist und dass sie nur als eine Folge der Tonhöhe und des Tonverlaufs anzusehen ist'.³⁾

As far as the level, the rising and the falling tones of Northern Mandarin are concerned this description tallies well with my own observations of the Sich'uanese tones. The intensity manifestations of the circumflex tones — the third tone of Northern Mandarin and Sich'uanese tone 4 — are entirely different.

We have seen that Romportl regards the intensity manifestations as conditioned by the pitch and the form of the tone. He does, however, recognize the

¹⁾ Cf D. B. Fry and D. Kostic, *A Serbo-Croat Phonetic Reader*, University of London Press, 1939, p. 8. and G. L. Trager, *Serbo-Croatian Accents and Quantities*, *Language*, vol. 16., No. 1., 1940., p. 30.

²⁾ M. Swadesh, *A Condensed Account of Mandarin Phonetics*. *Travaux du Cercle Linguistique de Prague*, vol. 8., 1939., p. 213. and Charles F. Hockett, *Peiping Phonology*, *Journal of the American Oriental Society*, vol. 67., No. 4., October-December, 1947., p. 256.

³⁾ M. Romportl, *Zum Problem der Tone im Kuo-yu*. *Archiv Orientalni*, vol. 21., 1953., p. 276.

distinctiveness of intensity manifestations in whispered speech: 'Meiner Meinung nach ist also die Ausbreitung der Intensität innerhalb einer Silbe nur als sekundäre Erscheinung anzusehen; doch könnte sie ausnahmsweise b.zw. beim Flüstern, wenn weder die Tonhöhe noch der Tonverlauf realisiert werden können, zum wichtigsten Kennzeichen eines Tons werden. Weil es sich aber nur um einen Ausnahmefall handelt, muss auch dieses Element nur für einen Begleitung des Tons gehalten werden'.¹⁾

Also in Sich'uanese the whispered tones (by the term 'whispered tone' is here implied the features, which in whispered speech substitute the tones of normal speech) are clearly differentiated. The distinctiveness of whispered tones is probably not due to pitch and form, which features appear to be nearly entirely lost in whispered speech. Certain incidental features of the tones of normal speech, such as the conditioned variation between Ch /iōu/ [iu] and /iōu/ [iou] are also found in whispered speech. No doubt the distinctiveness of whispered tones is to some extent due to such incidental features. The intensity manifestations remain, in my opinion, the most prominent distinctive feature of whispered tones.

Without experimental analysis it is naturally impossible to decide which of the two features, form or intensity, is the primary tone differentiating factor.

In unstressed syllables form and intensity manifestations appear to be entirely lost. Such unstressed syllables are said to be atonal.

The tone of a syllable uttered in isolation has been termed its etymological tone. The etymological tones of Ch'engtū, Loshan and Omei will be described below.

THE ETYMOLOGICAL TONES OF THE CH'ENGTU DIALECT

Tone 1: [45]. Crescendo intensity is clearly observable in strongly stressed syllables with simple finals. With certain compound finals, such as /ai/, /ei/, /en/, /in/, /ang/ and /ong/ the syllabic quantity appears to be progressively distributed: [aɿ:], [eɿ:], [ən:], [in:], [aŋ:] and [oŋ:].

Tone 2: [21]. The pitch-range is very narrow and this tone has frequently been heard as a low level tone: [11]. The slightly falling form is more easily observable in syllables with voiced initials and in syllables containing medial /i/, /iu/ and /u/. Both level and diminuendo intensity have been recorded. In stressed syllables with certain compound finals the quantity appears to be regressively distributed within the syllable: /ai/ [aɿ], /ei/ [eɿ], /en/ [əñ], /ang/ [aŋ̃] and /ong/ [oŋ̃].

Tone 3: [53]. Diminuendo intensity is clearly observable in strongly stressed syllables with simple finals. The same regressive distribution of quantity as has been observed with tone 2 is found also with tone 3: /ai/ [aɿ].

Tone 4: [213]. In strongly stressed syllables there frequently occurs a glottal constriction or a glottal stop in the turning-point of the falling-rising form:

¹⁾ Ibid., p. 314.

/ta/ [daʔa]. Tone 4 is longer than the other tones of the dialect. This increased length is clearly incidental to the falling-rising form. The same lengthening of syllables accompanied by a falling-rising intonation occurs also in non-tonal languages. In syllables containing one of the endings /-n/ or /-ng/ the rising part of the form is normally carried by these endings.

THE ETYMOLOGICAL TONES OF THE LOSHAN DIALECT

Tone 1: [55]. Level intensity is clearly observable in strongly stressed syllables containing simple finals.

Tone 2: [11]. Both level intensity and diminuendo intensity have been recorded for strongly stressed syllables containing simple finals.

Tone 3: [43]. Diminuendo intensity is clearly observable in strongly stressed syllables containing simple finals.

Tone 4: [213]. In strongly stressed syllables [ʔ] frequently occurs in the turning-point of the falling-rising form.

Tone 5: [44]. This tone is considerably shorter than the other four, which are all more or less long, tone 4 being the longest tone in the dialect. This non-distinctive difference in length has not been marked in the phonetic notation: /sī/ [sɿ]: /si/ [sə]. The tone mark [˘] used in the systematic transcription is meant to suggest also the conditioned shortness of these tone 5 finals.

THE ETYMOLOGICAL TONES OF THE OMEI DIALECT

The pitch-range of the Omei dialect is considerably wider than that of the other two dialects. The relative intervals between the first four tones are approximately the same as those of the corresponding tones of the Ch'engt'u dialect. Omei tone 5, however, is an extra-high level tone. The interval between tone 5 and tone 1, which also is high level, has frequently been recorded as a major third.

Intensity manifestations have been observed in strongly stressed syllables with simple finals.

Tone 1: [44]; level intensity;

Tone 2: [11]; level intensity;

Tone 3: [43]; diminuendo intensity;

Tone 4: [213]; in strongly stressed syllables containing one of the finals /e/, /a/, /ia/ and /ua/ [ʔ] frequently occurs in the turning-point of the falling-rising form.

Tone 5: [55]; level intensity.

All five tones are long; tone 4 is slightly longer than the other tones.

In all three dialects there are certain restrictions as to what tone may occur with what type of syllable.

Ch tone 1 rarely occurs with syllables containing one of the initials /m/, /l/ or /ng/ [ɲ]. Such cases as do occur are often idiomatic expressions, for which there

are no written forms, e.g. /min/ in 1. /'mīn-thiàn/ 'extremely sweet', /'mī-mī/ 'breasts; nipples', /'māng-māng/ 'food' (in children's language), /lēn/ 'to twine', /lōu/ 'to bear responsibility' and /'ngiā-per/ 'spoilt, of children'.

In syllables containing unaspirated stops and affricates Ch tone 2 is restricted to syllables with simple finals. Only a few exceptions have been found, such as the *t'u hua* words /tìn/ 'to stare', /tòng/ 'to push', /piàng/ 'clumsy'.

After initials other than /ts tsh s z/ Ch /e/ is restricted to tone 2. The only exceptions found are 2. /kē/ 'to give', /kě/ in 3. /màn-kě-kě-li/ 'sluggish' and /kê/ in 4. /tâ 'kê/ 'to belch'.

Ch /mie thie lie ngie khiue kue khue hue lio kio hio/ are found only with tone 2. With the exception of 5. /piē/ 'to compel', 6. /tiē/ 'father', /kiuē/ 'to jostle', 7. /hiuē/ 'boots', 8. /iuē/ 'to bend' and /khiô/ 'to peep' the syllables /pie tie kiue hie iue khiô/ have only been found with tone 2.

In L and O unaspirated stops and affricates do not occur with tone 2.

L tone 5 is only found with simple finals.

The tonal system of the Omei dialect presents a highly interesting phenomenon which has no known parallel in any other Chinese dialect. The distribution of tone 4 and tone 5 is almost complementary: tone 4 occurs with all compound finals except /er/ and with the simple final /e/. Tone 5 is found with all simple finals with the exception of /e/ and with the compound final /er/. The finals /a ia ua/ occur with both tone 4, [A iA uA] and tone 5, [æ iæ uæ]. If we could regard [æ iæ uæ] not as allophones of /a ia ua/ but as separate phonemes occurring only with tone 5 the complementary distribution of tone 4 and tone 5 would be without exception.

tone sandhi

In connected speech tones are subjected to certain conditioned variation normally referred to as tone sandhi. In the present study observations of tone sandhi features have been confined to the Ch'engtu dialect.

The tone sandhi features of the Ch'engtu dialect are conditioned by the stress pattern of the expression in which the sandhi features occur, the position in that same expression of the syllable subjected to sandhi variation and the tonal environment.

The following degrees of stress are recognized: strong stress (2), weak stress (1) and zero stress (0).

The present study of the tone sandhi features of the Ch'engtu dialect has been confined to two-syllabic expressions with one of the stress patterns 1—2, 2—1 and 2—0 and three-syllabic substantival expressions with the stress pattern 2—1—1. The two positions, which a syllable may occupy in two-syllabic expressions, are termed initial and final. In three-syllabic expressions the positions are termed initial, medial and final respectively.

In the following list of two-syllabic expressions with the stress pattern 1—2 in all possible tonal combinations the first column gives the tones of the two syllables (cf. p. 147 below):

1 1	1. /khai kong/	[44:45]	'to begin to work';
1 2	2. /khai men/	[44:21]	'to open the door';
1 3	3. /khai lian/	[44:53]	'to wipe one's face';
1 4	4. /khai huei/	[44:213]	'to hold a meeting';

We find that the tones of the final syllables are identical with the etymological tones. The same tonal values are found in all strongly stressed final syllables irrespective of the tonal environment. In initial syllables tone 1 is realized as a half-high level tone.

2 1	5. /so su/	[21:45]	'to tell stories';
2 2	6. /so ming/	[21:21]	'to explain';
2 3	7. /so hau/	[21:53]	'to settle';
2 4	8. /so tsho/	[21:213]	'to pronounce wrongly';

Initial tone 2 appears to be identical with its etymological variant. When followed by tone 2 or tone 4, however, initial tone 2 has frequently been heard as a half-low level tone: [22].

3 1	9. /ta tsen/	[55:45]	'to give an injection';
3 2	10. /ta zen/	[55:21]	'to beat people';
3 3	11. /ta hau/	[55:53]	'to hit well';
3 4	12. /ta tsai/	[55:213]	'to type';
4 1	13. /khan su/	[213:45]	'to read';
4 2	14. /khan uan/	[213:21]	'to finish reading';
4 3	15. /khan sua/	[213:53]	'to look for fun';
4 4	16. /khan hi/	[213:213]	'to go to the opera';

Initial tone 4 retains its circumflex form, but appears to have a slightly higher pitch than its etymological variant. When the following syllable has tone 4 the rising part of the initial tone appears to be more prominent than the falling.

Examples of two-syllabic expressions with the stress pattern 2—1 in all possible tonal combinations:

1 1	17. /tong-pian/	[45:33]	'the East';
1 2	18. /in-uen/	[45:21]	'English';
1 3	19. /hiong-sou/	[45:31]	'murderer';
1 4	20. /kan-fan/	[45:12]	'dry rice';
2 1	21. /lan-pian/	[21:33]	'the South';
2 2	22. /khiong-zen/	[21:21]	'poor people';
2 3	23. /pe-sou/	[21:53]	'white hand';
2 4	24. /pe-fan/	[21:12]	'plain rice';

3 1	25.	/la-pian?/	[55:33]	'which side?';
3 2	26.	/hiau-zen/	[55:21]	'children';
3 3	27.	/tso-sou/	[55:31]	'the left hand';
3 4	28.	/tsau-fan/	[55:12]	'breakfast';
4 1	29.	/la-pian/	[213:33]	'that side';
4 2	30.	/ta-zen/	[213:21]	'grown-ups';
4 3	31.	/iou-sou/	[213:53]	'the right hand';
4 4	32.	/pian-fan/	[213:12]	'everyday food';

In initial syllables tone 1, tone 2 and tone 4 have the same tonal values as the corresponding etymological tones. Initial tone 3 is realized as a high level tone.

In final syllables we find the following tone manifestations: tone 1 is mid-high level; tone 2 is unchanged; the realization of tone 3 is conditioned by the tonal environment: [53] occurs after tone 2 and tone 4, [31] occurs after tone 1 and tone 3; tone 4 is low rising.

Certain special tone sandhi features are found in reduplicated expressions with the stress pattern 2—1:

1 1	33.	/ma-ma/	[45:33]	'mother';
	34.	/thang-thang/	[45:33]	'gravy';
2 2	35.	/ngiang-ngiang/	[21:33]	'father's mother';
	36.	/thou-thou/	[21:33]	'tip, end';
3 3	37.	/kie-kie/	[55:31]	'elder sister';
	38.	/pan-pan/	[55:31]	'board';
4 4	39.	/mei-mei/	[213:33]	'younger sister';
	40.	/lu-lu/	[213:33]	'thin pencil-stroke; parting of the hair'.

The same tonal variants as occur in second syllables of reduplicated expressions have been recorded in the following expressions:

41. /'hè-thàu/ 'walnut', 42. /'phù-thàu/ 'grape', 43. /'kù-thòu/ 'bone' and 44. /'tshù-thòu/ 'hoe', which compounds all have been recorded as [21:33] and 45. /'uǎi-thòu/ [213:33] 'outside'.

Unstressed syllables have no distinctive pitch forms and are said to be atonal or accompanied by neutral tone. Atonal syllables occur predominantly in post-tonal position and are pronounced on a half-low or low pitch:

46. /'khū-tsī/ [45:2] 'ring', 47. /'fàng-tsī/ [21:1] 'house'. 48. /'mī-tsī/ [55:2] 'shelled peanuts' and 49. /'khū-tsī/ [213:1] 'trousers'.

The subordinative particle 50. /li/ differs from other atonal syllables in the following respects: /li/ is always atonal and its pitch is conditioned by the tonal environment:

51. /'suān-li/ [45:4] 'sour', 52. /'huàng-li/ [21:1] 'yellow', 53. /'hiáu-li/ [55:4] 'small' and 54. /'tǎ-li/ [213:3] 'something large'.

List of Tonal Variants Occurring in Isolated Syllables and in Two-Syllabic Expressions

Tones:	Variants	Distribution
Tone 1	1) [45]	In isolated syllables. In syllables, initial and final, accompanied by strong stress.
	2) [44]	In initial syllables accompanied by weak stress.
	3) [33]	In final syllables, accompanied by weak stress (including the final syllables of reduplicated expressions).
Tone 2	4) [21]	Everywhere, except in the final syllables of reduplicated expressions.
	5) [33]	In final syllables of reduplicated expressions.
Tone 3	6) [53]	In isolated syllables. In final syllables, accompanied by strong stress. In final syllables accompanied by weak stress, after syllables with tone 2 and tone 4.
	7) [55]	In initial syllables.
	8) [31]	In final syllables, accompanied by weak stress, after syllables with tone 1 and tone 3 (including therefore, the final syllables of reduplicated expressions).
Tone 4	9) [213]	In isolated syllables. In syllables, initial and final, accompanied by strong stress. In initial syllables accompanied by weak stress.
	10) [12]	In final syllables accompanied by weak stress.
	11) [33]	In final syllables of reduplicated expressions.

Most three-syllabic substantival compounds contain one monosyllabic and one two-syllabic constituent in the arrangement (a-b)+(c) or (a)+(b-c). In compounds of the former type the first constituent is frequently a verb-object expression, which in free position has the stress pattern 1-2, or a compound noun, which in free position has the stress pattern 2-1. We find that the contrastive stress patterns of such two-syllabic expressions become neutralized when these forms are included as first constituents of larger compounds, which normally have the stress pattern 2-1-1.

The second syllable of compounds with this stress pattern appears to be less prominent than the third syllable. It is interesting to note that the presence of stress sometimes is most easily determined from the tonal features of the second syllable. This may be illustrated by a comparison between the following two compounds: 55. /'kiò-tsí-mêr/ [21:55:31] 'toe' and 56. /'kiù-tsí-suéi/ [21:1:53] 'orange juice'. In the first compound the second syllable has a high level tone, which, as we shall see later, is a conditioned variant of tone 3, whereas in the second compound the second syllable is atonal and pronounced on a low pitch. On the basis of these tonal features the stress patterns of these compounds may be stated as 2-1-1 and 2-0-1 respectively.

In substantival compounds of the type (a)+(b-c) the second constituent is frequently a compound noun, which in free position has the stress pattern 2-1. In such compounds emphatic stress on the first syllable is frequently accompanied by a weakening of stress on the following two syllables, resulting in the stress pattern 2-0-0. When there is no emphatic stress such compounds normally have the stress pattern 2-1-1.

- | | | | | | |
|--------|--------|--------|--------|--------|--------|
| 1. 開工 | 2. 開門 | 3. 揩臉 | 4. 開會 | 5. 說書 | 6. 說明 |
| 7. 說好 | 8. 說錯 | 9. 打針 | 10. 打人 | 11. 打好 | 12. 打字 |
| 13. 看書 | 14. 看完 | 15. 看要 | 16. 看戲 | 17. 東邊 | 18. 英文 |
| 19. 兇手 | 20. 乾飯 | 21. 南邊 | 22. 窮人 | 23. 白手 | 24. 白飯 |
| 25. 哪邊 | 26. 小人 | 27. 左手 | 28. 早飯 | 29. 那邊 | 30. 大人 |
| 31. 右手 | 32. 便飯 | 33. 媽媽 | 34. 湯湯 | 35. 娘娘 | 36. 頭頭 |
| 37. 姐姐 | 38. 板板 | 39. 妹妹 | 40. 路路 | 41. 核桃 | 42. 葡萄 |
| 43. 骨頭 | 44. 鋤頭 | 45. 外頭 | 46. 籠子 | 47. 房子 | 48. 米子 |
| 49. 褲子 | 50. 的 | 51. 酸的 | 52. 黃的 | 53. 小的 | 54. 大的 |
| 55. 腳子 | 56. 姆兒 | 57. 橘子 | 58. 水 | | |

The following list contains three-syllabic substantival compounds with the stress pattern 2—1—1 in all possible tonal combinations (cf. p. 149):

- | | | | |
|-------|----------------------|------------|---------------------------|
| 1 1 1 | 1. /kau-tsong-ser/ | [45:33:33] | 'high-school student'; |
| 1 1 2 | 2. /hua-sen-thang/ | [45:33:21] | 'sweet, made of peanuts'; |
| 1 1 3 | 3. /sī-sen-tsāi/ | [45:33:31] | 'illegitimate child'; |
| 1 1 4 | 4. /hin-i-uan/ | [45:33:12] | 'the New Hospital'; |
| 1 2 1 | 5. /hin-hio-ser/ | [45:21:33] | 'new student'; |
| 1 2 2 | 6. /thou-iou-pho/ | [45:21:21] | 'cockroach'; |
| 1 2 3 | 7. /pa-pi-fer/ | [45:21:53] | 'house lizard'; |
| 1 2 4 | 8. /ku-er-uan/ | [45:21:12] | 'orphanage'; |
| 1 3 1 | 9. /san-ten-tshe/ | [45:53:33] | '3rd class carriage'; |
| 1 3 2 | 10. /uen-suei-phin/ | [45:53:21] | 'thermos-bottle'; |
| 1 3 3 | 11. /san-hiau-kie/ | [45:53:31] | 'third miss'; |
| 1 3 4 | 12. /khai-suei-tan/ | [45:53:12] | 'poached egg'; |
| 1 4 1 | 13. /hin-ta-i/ | [45:11:33] | 'new overcoat'; |
| 1 4 2 | 14. /hi-tsang-zen/ | [45:11:21] | 'Tibetans'; |
| 1 4 3 | 15. /ten-ki-so/ | [45:11:53] | 'registration office'; |
| 1 4 4 | 16. /hi-tsang-hua/ | [45:11:12] | 'Tibetan'; |
| 2 1 1 | 17. /huang-pau-tshe/ | [21:45:33] | 'street ricksha'; |
| 2 1 2 | 18. /phu-ten-uer/ | [21:45:21] | 'moth'; |
| 2 1 3 | 19. /kio-kian-u/ | [21:45:31] | 'ballet dancing'; |
| 2 1 4 | 20. /hong-sau-zou/ | [21:45:12] | 'red-cooked meat'; |

2 2 1	21.	/liou-hio-ser/	[21:21:33]	'student studying abroad';
2 2 2	22.	/pe-zī-khe/	[21:21:21]	'whooping cough';
2 2 3	23.	/phu-thau-kiou/	[21:21:53]	'port-wine';
2 2 4	24.	/la-pa-fan/	[21:21:12]	'special rice dish eaten on the 8th day of the 12th month';
2 3 1	25.	/kio-pan-kai/	[21:55:33]	'street name';
2 3 2	26.	/huang-su-ler/	[21:55:21]	'skunk';
2 3 3	27.	/kio-tsi-mer/	[21:55:31]	'toe';
2 3 4	28.	/ngi-suei-kiang/	[21:55:12]	'bricklayer';
2 4 1	29.	/hong-ta-i/	[21:11:33]	'red overcoat';
2 4 2	30.	/iou-iun-tshī/	[21:11:21]	'swimming pool';
2 4 3	31.	/iou-tsa-mer/	[21:11:53]	'locust';
2 4 4	32.	/u-hian-tian/	[21:11:12]	'wireless';
3 1 1	33.	'kuei-ten-kuer/	[55:33:33]	'owl';
3 1 2	34.	/san-hi-zen/	[55:33:21]	'people from Shensi';
3 1 3	35.	/fang-sa-tshang/	[55:33:31]	'cotton mill';
3 1 4	36.	/hai-kiau-mier/	[55:33:12]	'ground red pepper';
3 2 1	37.	/hiau-hio-ser/	[55:21:33]	'primary school student';
3 2 2	38.	/lau-lan-men/	[55:21:21]	'the Old South Gate';
3 2 3	39.	/suei-phin-tshī/	[55:21:53]	'a level';
3 2 4	40.	/pian-thau-hian/	[55:21:12]	'the tonsils';
3 3 1	41.	/ta-ho-ki/	[55:53:33]	'cigarette lighter';
3 3 2	42.	/hi-lian-phen/	[55:53:21]	'wash-basin';
3 3 3	43.	/lau-hiau-kie/	[55:53:31]	'old spinster';
3 3 4	44.	/ma-thong-kai/	[55:53:12]	'closet lid';
3 4 1	45.	/ta-tsi-ki/	[55:11:33]	'typewriter';
3 4 2	46.	/ta-phi-tshong/	[55:11:21]	'beetle';
3 4 3	47.	/ta-khi-thong/	[55:11:53]	'a pump';
3 4 4	48.	/mian-tian-hua/	[55:11:12]	'Burmese';
4 1 1	49.	/ian-o-thang/	[213:45:33]	'bird's nest soup';
4 1 2	50.	/uang-kiang-lou/	[213:45:21]	'the Pavilion overlooking the River';
4 1 3	51.	/ti-tsong-hai/	[213:45:31]	'the Mediterranean';
4 1 4	52.	/si-tshuan-tshai/	[213:45:12]	'Sich'uanese food';
4 2 1	53.	/tsi-hi-pan/	[213:21:33]	'self-study group';
4 2 2	54.	/si-kio-se/	[213:21:21]	'lizard';
4 2 3	55.	/lai-ke-pau/	[213:21:53]	'toad';
4 2 4	56.	/pau-kue-si/	[213:21:12]	'the Monastery that recom- penses the country';

- 4 3 1 57. /tso-pan-tshuang/ [213:55:33] 'boils on the buttocks';
 4 3 2 58. /sī-u-lu/ [213:55:21] 'the 4—5—6 restaurant';
 4 3 3 59. /ta-thuei-u/ [213:55:31] 'can-can';
 4 3 4 60. /tian-in-uan/ [213:55:12] 'cinema';
 4 4 1 61. /tsau-hiang-ki/ [213:11:33] 'camera';
 4 4 2 62. /iun-ho-tshuan/ [213:11:21] 'freighter';
 4 4 3 63. /kau-hua-tsī/ [213:11:53] 'beggar';
 4 4 4 64. /kua-hua-hin/ [213:11:12] 'registered mail'.

The tone sandhi features of the three-syllabic compounds listed above are summarized in the following table:

Tone	initial position	medial position	final position
1	[45]	[33], after tone 1 and 3 [45], after tone 2 and 4	[33]
2	[21]	[21]	[21]
3	[55]	[53], after tone 1 and 3 [55], after tone 2 and 4	[31], after tone 1 and 3 [53], after tone 2 and 4
4	[213]	[11]	[12]

- | | | | |
|----------|----------|----------|----------|
| 1. 高中生兒 | 2. 花生糖 | 3. 私生子 | 4. 新醫院 |
| 5. 新學生兒 | 6. 偷油婆 | 7. 巴壁虎兒 | 8. 孤兒院 |
| 9. 三等車 | 10. 溫水瓶 | 11. 三小姐 | 12. 開水蛋 |
| 13. 新大衣 | 14. 西藏人 | 15. 登記所 | 16. 西藏話 |
| 17. 黃包車 | 18. 撲燈蛾兒 | 19. 腳尖舞 | 20. 紅燒肉 |
| 21. 留學生 | 22. 百日咳 | 23. 葡萄酒 | 24. 臘八飯 |
| 25. 腳板街 | 26. 黃鼠狼兒 | 27. 腳指拇兒 | 28. 泥水匠 |
| 29. 紅大衣 | 30. 游泳池 | 31. 油炸猛兒 | 32. 無線電 |
| 33. 鬼燈哥兒 | 34. 陝西人 | 35. 紡紗廠 | 36. 海椒麵兒 |
| 37. 小學生兒 | 38. 老南門 | 39. 水平尺 | 40. 扁桃腺 |
| 41. 打火機 | 42. 洗臉盆 | 43. 老小姐 | 44. 馬桶蓋 |
| 45. 打字機 | 46. 打屁蟲 | 47. 打氣筒 | 48. 緬甸話 |
| 49. 燕窩湯 | 50. 望江樓 | 51. 地中海 | 52. 四川菜 |
| 53. 自習班 | 54. 四腳蛇 | 55. 癩格寶 | 56. 報國寺 |
| 57. 坐板瘡 | 58. 四五六 | 59. 大腿舞 | 60. 電影院 |
| 61. 照像機 | 62. 運貨船 | 63. 叫化子 | 64. 挂號信 |

COMPARISON BETWEEN THE DIALECTS

Purely phonetic divergences between the dialects have been described above. In this chapter we shall discuss only the systematic divergences, i.e. such divergences as are revealed in the systematic, quasi-phonemic transcription.

The main systematic divergences between the three dialects are shown in the following correspondence charts, which list 73 numbered correspondence series (below abbreviated as *corr.*). The Ch'engtu finals are given in the top row and the corresponding Loshan and Omei finals in the two bottom rows. The last row gives the actual number of recorded instances within each correspondence series.

List containing these instances of correspondence are added after the charts. Numbers occurring in these lists refer to the Kuang yün rimes as tabulated by Karlgren. The two rimes *ja** and *juâ**, which are not included in Karlgren's list, have been inserted as 1 b and 2 b respectively.¹⁾

One correspondence series — /iò:/ü:/ü/ — has for practical reasons not been included in the charts. The few recorded instances of this correspondence are given in the list 34 a below.

A comparison between the dialects reveals that there is on the whole a one-to-one correspondence as far as initials are concerned. The only major systematic difference results from the fact that the oppositions /ngi:/li/, /ngiu:/liu/, /ngian:/lian/ etc. of the Ch'engtu dialect do not obtain in Loshan and Omei, which dialects have /li/, /liu/ and /lian/ etc. for Ch'engtu /ngi/, /ngiu/ and /ngian/. The correspondence charts are based on the Ch'engtu dialect and forms like /ngi/ occurring in these charts will therefore have to be interpreted as /ngi:/li:/li/.

The complementary distribution of Ch [ɲ] and [ŋ] has made me prefer to treat the palatal affricates [tɕ], [tɕ'] and the palatal fricative [ç] as conditioned variants of /k/, /kh/ and /h/ respectively. L and O [tɕ], [tɕ'] and [ç] could equally well have been regarded as conditioned variants of /ts/, /tsh/ and /s/.

The initial system of the Sīch'uanese dialects studied by N. C. Scott²⁾ appears to be identical with that of the Ch'engtu dialect. Scott's treatment differs widely from the present one. What has here been termed medial /i/, /iu/ and /u/ has by Scott been regarded as palatalization, labio-palatalization and labio-velarization of the initial. Instead of regarding [ŋ] and [ɲ] as conditioned variants of one initial term Scott has chosen to treat the latter as *ny*, i.e. *n* followed by palatal friction. The Ch'engtu opposition /ngi:/li/, which obtains in one of the dialects studied by Scott, is described as *nyi:lyi*, i.e. *n* followed by palatal friction + *i* and *n* without palatal friction + *i* respectively.

Some of the most interesting divergences between the finals of the three

¹⁾ Li Yung, *Ts'ie yün yin hi*, Chung kuo k'o hūe yūan yū yen hūe chuan k'an, Peking, 1952., p. 47 and p. 95.

²⁾ N. C. Scott, *The Monosyllable in Szechuanese*, Bulletin of the School of Oriental and African Studies, vol. XII, part 1., 1947.

dialects relate to the fact that the dialect of Loshan does not possess the vowel phoneme /e/:

- corr. 13. /e/ : /ei/ : /e/
- corr. 14. /è/ : /ǎ/ : /ǎ/
- corr. 15. /è/ : /ǒ/ : /ǎ/
- corr. 16. /ē/ : /ǒ/ : /ǐ/
- corr. 25. /ie/ : /i/ : /ie/
- corr. 26. /iě/ : /ǐ/ : /iě/
- corr. 27. /iè/ : /ǐ/ : /ǐ/
- corr. 28. /iè/ : /ǐ/ : /iě/
- corr. 35. /iue/ : /iu/ : /iue/
- corr. 36. /iue/ : /iu/ : /iue/
- corr. 37. /iuè/ : /iǔ/ : /iue/
- corr. 38. /iuè/ : /iǔ/ : /iǒ/
- corr. 39. /uè/ : /ǒ/ : /ǒ/
- corr. 40. /uè/ : /ǔ/ : /uǎ/
- corr. 41. /uè/ : /uǎ/ : /uǎ/
- corr. 55. /er/ : /l/ : /er/
- corr. 56. /ěr/ : /ḷ/ : /ěr/

I have elsewhere¹⁾ tried to demonstrate how the 'displacement' of /e/, which vowel must have existed at a transitory stage in the development of the Loshan dialect, probably was conditioned by the zero realization of /n/ in the finals /an ian iuan uan/ [a iɛ yɛ ua].

Corr. 55. /er/ : /l/ : /er/ and corr. 56. /ěr/ : /ḷ/ : /ěr/ are of special interest. L /l/ could be regarded as a realization of /zī/ : /zǐ/ [l] 'son' and /zǐ/ [zə] 'sun'. This treatment would in fact be in strict conformity with the historic development of the syllable. Ch and O /er/, however, cannot be so treated, as Ch possesses the forms /èr/ 'son' and /zǐ/ 'sun' and O possesses the forms /ěr/ 'two' and /zǐ/ 'sun'.

One of the dialects studied by N. C. Scott²⁾ appears to be structurally similar to the Ch'engtū dialect. The syllables *er* and *zǐ* of this dialect have both been represented by *zi*. The difference in realization has been regarded as conditioned by tone: with tone 5 *zi* is realized as 'z', with other tones as 'a kind of retroflex æ'.³⁾ The difficulty is that the dialect in question does not possess tone 5, or, rather, that tone 5 is an abstraction introduced to make possible a systematic transcription adequate for the two dialects studied by Scott. In fact, the construction of such an intra-dialectal transcription is one of the main purposes of Scott's study.

¹⁾ A Note on two Szech'uanese Dialects, *Studia Serica Bernhard Karlgren Dedicata*, Copenhagen, 1959., p. 92.

²⁾ N. C. Scott, *The Monosyllable in Szechuanese*, *Bulletin of the School of Oriental and African Studies*, vol. XII, part 1., 1947.

³⁾ N. C. Scott, *The Monosyllable in Szechuanese*, p. 204.

The Loshan finals [ɛi uɛi ɛn uɛn] could be phonemically treated as /oi uoi on uon/. In the present study these finals have been transcribed as /ei uei en uen/ in conformity with the corresponding finals in Ch'engtu and Omei.

In a strictly phonemic analysis our finals /i/ and /i/ could be treated as members of one phoneme, preferably represented by /i/. Ch and O /i/ would then comprise two allophones: [ɿ] occurring in /tsi tshi si zi/ and [i] occurring elsewhere. L /i/ would comprise four allophones, viz. [ɿ], [ə], [i] and [iɿ], which terms in the present study are treated as /i/, /i/, /i/ and /i/ respectively. L [ɿ] could also be treated as /zi/.

It would be possible to treat L /a/, /ǎ/ and the final in /ko kho ngo ho/ as allophones of one phoneme. With this treatment the distinction between L /u/ and /o/ would be neutralized in syllables accompanied by tone 5.

For a comparison between the tone categories of the three dialects see sub *The evolution of the Ancient Chinese tones* below.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.
Ch	i	ĩ	ì	iu	iũ	iù	u	ũ	ù	ĩ	ĩ	ĩ	e	è	è	ē	a	à	o	ǒ	ō	ò	ò	ò
p	比	備	筆				補	步	不					北			把	八	波	播	撥			
ph	皮	庇	足				鋪	鋪	卜					魄			怕	拔	坡	破	潑			
m	眉	寐	蜜				母	木						墨			馬	抹	魔	幕	末			
f							胡	父	佛									法						
t	低	弟	敵				賭	度	獨					得			大	答	多	墮	奪			
th	堤	弟	踢				土	免	突					特			他	懶	駝		脫			
l	梨	利	力	旅	慮		奴	路	律					肋			拏	蠟	羅	孺	落			
ts							祖	助	竹	知	字	質	蔗	摺			爹	雜	左	坐	作			
tsh							粗	醋	出	持	荊	稭	車	撤			差	察	搓	錯	濁			
s							書	樹	叔	詩	四	十	蛇	舌			沙	殺	鎖		說			
z							如	入					日	惹	熱						弱			
k	難	記	集	居	句	菊	古	故	骨							格	給	kə	歌	過				各
kh	欺	器	漆	區	趣		枯	庫	哭							客		kua	可	攔	課			蛤
ng	宜	藝		女												額		ngə	我					惡
h	西	細	習	須	序											黑		ha	河	賀		活	忽	合
zero	衣	意	一	魚	預		五	霧	屋									a	俄	卧		握	物	
L	i	ĩ	ĩ	iu	iũ	iũ	u	ũ	ũ	ĩ	ĩ	ĩ	ei	ǎ	ō	ō	a	ǎ	o	ǒ	ō	ũ	ũ	ō
O	i	ĩ	ĩ	iu	iũ	iũ	u	ũ	ũ	ĩ	ĩ	ĩ	e	ǎ	ǎ	ĩ	ǎ	ǎ	o	ō	uǎ	ō	ũ	ō
	80	45	40	22	20	3	90	51	52	47	29	24	14	42	11	1	29	30	47	18	1	34	3	11

	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.
Ch	ie	iě	iè	iè	ia	ià	iò	iò	iò	iò	iue	iue	iue	iue	uè	uè	uè	ua	ua	ua	uà
p				別	痛																
ph			僻		phia																
m				滅																	
f																					
t	爹			蝶																	
th				帖																	
l			潛	獵				掠													
ts																			抓		
tsh																					
s																			厦	刷	
z																			厦		
k	姐	借	寂	接	加	夾	脚					絕	決		國				瓜	刮	
kh	且		乞	切	恰	曲	確			茹	瘤	闊			闊				誇		
ng				業	ngia																
h	寫	謝	息	協	夏	瞎	戕	學				靴	雪	或					花	滑	
zero	也	夜		葉	牙	鴨	育	約	役			悅	月						瓦	襪	
L	i	ĩ	ĩ	ĩ	ia	iă	iũ	iũ	iũ	iũ	i'	iu	iũ	iũ	ö	ũ	uă	ua	a	a	uă
O	ie	iě	ĩ	iě	ia	iă	iũ	iö	iě	ĩ	iue	iue	iue	iö	ö	uă	uă	ua	ua	a	uă
	8	4	9	34	24	7	1	15	2	2	1	2	6	5	2	2	1	2	11	1	4

	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.
Ch	ei	ai	ou	au	en	an	ong	ang	ang	er	ěr	iai	iai	iou	iau	ian	ian	in	iong	iang	uei	uei	uen	uan	ueng	uang	iun	iuen
p	悲	拜	保	本	半	綱	邦								表	辦	冰											
ph	陪	牌	跑	盆	判	朋	傍								嫖	篇	品											
m	美	埋	毛	門	滿	夢	忙								妙	面	明											
f	非			分	帆	風	芳																					
t		待	斗	刀	數	但	東	當						岳	釣	店	丁			推			端					
th		台	偷	桃	吞	談	同	湯						條	天	停			推			團						
l		來	漏	老	論	男	龍	浪						流	料	連	憐	林		涼	累		暖					
ts		災	走	早	針	暫	中	張	鞦												追	準	專		莊			
tsh		才	抽	抄	村	殘	冲	腸	倉												吹	揣	春	川	牀			
s		賽	手	少	深	三	宋	常	桑												水	衰	純	腴	霜			
z			素	繞	任	染	絨	讓													銳	潤	鍊					
k		該	狗	高	根	干	工	剛			界		几	交	件	今	匠	鬼	怪	棍	棺		光	君	堡			
kh		閤	扣	考	肯	坎	恐	康					秋	橋	錢	漫	窮	強	塊	快	綢	寬		况	裾	三		
ng		愛	嘔	襖	恩	暗	昂						牛	尿	念	凝	娘											
h		孩	厚	好	很	汗	紅	項					休	孝	仙	心	兄	香	灰	壞	魂	歡		皇	兼	宣		
zero						艱		兒	二		延	油	要	眼		音	用	羊	位	外	問	完	翁	王	雲	頁		
L	ei	ai	ou	au	en	an	ong	ang	ang	l	ĩ	iai	ian	iou	iau	ian	ing	ing	iong	iang	uei	uei	uen	uan	ueng	uang	iun	iuen
O	ei	ai	ou	au	en	an	ong	ang	uang	er	ěr	iai	ian	iou	iau	ian	in	in	iong	iang	uei	uei	uen	uan	ueng	uang	iun	iuen
	20	61	55	75	94	101	88	61	9	3	1	4	2	37	46	89	1	106	11	44	71	10	19	43	1	24	14	31

Corr. 1. /i:/ /i:/ /i/

|P| 4a. 比 7b. 彼 |ph| 4a. 琵 4b. 鄙 7a. 脾皮疲 16a. 批
 |m| 4b. 眉 7a. 彌 16a. 迷米 |t| 16a. 低抵底 |th| 16a. 梯堤提
 啼題體 |l| 4a. 梨 5. 裡里裡理李 7a. 瑞離籬 16a. 犁
 禮 |n| 4a. 肌几 5. 箕基紀己 6a. 機譏幾 16a. 難臍擠
 |ts| 5. 欺期旗其 6a. 宣 7a. 騎奇 16a. 啓妻齊 |ʃ|
 4a. 呢 5. 疑擬你 7a. 宜儀 16a. 泥 |n| 5. 嬉熙禧喜
 6a. 希稀 16a. 西洗 |ʒu| 4a. 夷 5. 醫己矣 6a. 衣依 7a.
 椅移倚

Corr. 2. /ĩ/ /ĩ/ /ĩ/

|P| 4a. 譬 4b. 祕備 7a. 被遞 16a. 敝閉 |ph| 4a. 庇 |n| 4a.
 寐 16a. 謎 |t| 16a. 帝第弟 |th| 16a. 剃涕 |l| 4a. 利痢 5. 吏
 14a. 例厲勵 16a. 麗 |n| 5. 記忌 6a. 既 7a. 技技寄 14a.
 祭際 16a. 繼計濟 |ts| 4a. 器棄 6a. 氣 7a. 企 |ʃ|
 7a. 議 14a. 藝 9. 7a. 戲 16a. 糸細 |ʒu| 5. 意異 7a. 易蟻

Corr. 3. /i/ /i/ /i/

|P| 4a. 鼻 5. 筆必畢 69a. 逼 77a. 壁 |ph| 5. 匹 |n| 5. 密
 蜜 |t| 77a. 滴敵 |th| 77a. 踢 |l| 39. 立 5. 栗 69a. 力 77a.
 的歷 9. 39. 急級及集 69. 棘極 76. 積 77a. 擊 |ts| 5.
 七漆 77a. 戚 |n| 16a. 婿 39. 習 5. 膝蟋 76. 惜席夕
 77a. 錫 |ʒu| 39. 揖 5. 一 76. 益譯

Corr. 4. /iu/ /iu/ /iu/

|l| 87. 驢呂旅 |n| 87. 居舉 88. 拘駒 |ts| 87. 渠 88. 區趨
 |ʃ| 87. 女 |n| 4b. 雖 87. 虛許 86. 須 |ʒu| 87. 魚漁餘
 譽語 88. 愚雨

Corr. 5. /iǔ/: /iǔ/: /iǔ/

|l| 87. 盧 |ㄋ| 87. 巨 鋸 據 88. 句 具 娶 |ㄏ| 88. 趣 |ㄌ| 46. 遂
146. 總 87. 絮 序 |ㄗㄨ| 66. 慰 85. 玉 裕 87. 預 御 88. 茅 裕
寓

Corr. 6. /iù/: /iù/: /iù/

|ㄋ| 60. 橘 836. 菊 85. 局

Corr. 7. /u/: /u/: /u/

|p| 86. 補 |pʰ| 86. 鋪 蒲 普 |m| 93. 母 拇 牡 |f| 86. 呼 胡 湖 壺
糊 糊 狐 虎 88. 夫 敷 扶 府 俯 腑 斧 撫 腐 |t| 86. 都 堵 睹 賭
|tʰ| 86. 塗 圖 途 土 |l| 86. 奴 帑 廬 鐘 蘆 努 滷 魯 |ts| 86. 租 組
祖 87. 豬 諸 煮 88. 蛛 株 朱 主 |tsʰ| 85. 觸 86. 粗 87. 除
初 鋤 杵 楚 88. 厨 |s| 86. 穌 蘇 87. 蔬 梳 舒 書 暑 鼠 88.
輸 珠 |ʒ| 87. 如 88. 儒 |ㄋ| 86. 姑 孤 古 估 鼓 賈 股 |ㄏ| 86.
枯 箍 苦 |ㄗㄨ| 86. 娛 烏 五 午 88. 無 巫 誣 武 舞 侮

Corr. 8. /ü/: /ü/: /ü/

|p| 86. 布 步 捕 93. 部 |pʰ| 86. 鋪 |f| 86. 戶 互 護 88. 父 賦
傅 付 附 94. 婦 富 副 |t| 86. 度 渡 |tʰ| 86. 吐 兔 |l| 86. 怒
路 露 |ts| 87. 助 88. 駐 註 炷 注 蛀 住 鑄 |tsʰ| 86. 醋 87. 處
|s| 60. 術 述 86. 訴 素 87. 庶 恕 署 著 88. 樹 |ㄋ| 86. 故 固
顧 雇 |ㄏ| 86. 庫 |ㄗㄨ| 86. 娛 悟 88. 務 霧

Corr. 9. /ü/: /ü/: /u/

|p| 56. 不 |pʰ| 834. 卜 84. 僕 |m| 834. 木 沐 836. 目 牧 |f| 56. 弗
佛 佛 836. 福 幅 蝠 複 腹 伏 復 服 |t| 834. 獨 讀 84. 篤 督 毒
85. 贖 |tʰ| 56. 突 |l| 60. 律 834. 鹿 祿 836. 六 陸 85. 錄 綠
|ts| 836. 竹 築 逐 85. 燭 |tsʰ| 60. 出 85. 觸 |s| 836. 叔 淑 熟
85. 蜀 屬 |ʒ| 39. 入 85. 辱 |ㄋ| 56. 骨 834. 谷 穀 |ㄏ| 56. 窟
834. 哭 86. 跼 |ㄗㄨ| 834. 屋

Corr. 10. /i/ : /i/ : /i/

|ts| 4a. 脂資雉 旨指姊 5. 芝止滋子 7a. 知如支枝肢紙
只 7b. 隻 |tʂ| 4a. 蓬簪 5. 持耻齒慈辭祠 7a. 馳池侈
此 |s| 4a. 師獅獅私 5. 尸詩時使始絲司思死 7a.
施斯厮

Corr. 11. /i/ : /i/ : /i/

|ts| 4a. 致至 5. 志誌字 7a. 智翅 14a. 制製 |tʂ| 7a. 薊賜
|s| 4a. 視示四 5. 士仕市事試寺似 7a. 是氏 14a. 世勢
誓逝 69a. 式飾

Corr. 12. /i/ : /i/ : /i/

|ts| 4a. 贄置值植 39. 執 59. 質姪 69a. 直織 |tʂ| 19. 秩
76. 尺赤 |s| 39. 十拾涇 59. 實失室 69a. 食識釋 76. 適
石 |ʃ| 59. 日

Corr. 13. /e/ : /ei/ : /e/

|ts| 這 3c. 遞者蕨 |tʂ| 3c. 車擣 |s| 3c. 蛇賒奢捨社射舍
|ʃ| 3c. 惹

Corr. 14. /è/ : /ä/ : /ä/

|p| 68a. 北 74a. 百柏伯白 |ph| 74a. 拍魄迫 |m| 68a. 默墨 75b.

Corr. 15. /è/ /ö/ : /ä/

| ㄉ | 74a. 格 75a. 革 隔 隔 | ㄌㄨ | 68a. 剋 克 74a. 客 | ㄋㄅ | 74a. 額 | ㄋ |
68a. 黑 74a. 嚇 75a. 核

Corr. 16. /ē/ : /ö/ : /ī/

| ㄋ | 34. 給

Corr. 17. /a/ : /a/ : /a/

| ㄆ | 34. 巴 芭 把 | ㄆ | 34. 爬 跑 怕 | ㄇ | 34. 麻 麻 馬 馬 | ㄣ | 10a.
大 | ㄏ | 12. 他 | ㄣ | 12. 那 34. 拏 25. 拉 | ㄜ | 34. 爹 梓 昨 乍
| ㄜ | 34. 茶 叔 差 叉 查 | ㄜ | 34. 紗 沙 沙 灑

Corr. 18. /à/ : /ä/ : /ä/

| ㄆ | 46a. 八 | ㄆ | 46a. 拔 | ㄇ | 43. 抹 | ㄈ | 31. 法 乏 47a. 發 髮 伐 筏
罰 | ㄣ | 25. 搭 答 42. 達 | ㄏ | 25. 踏 26. 塔 塌 42. 獺 | ㄣ |
25. 納 26. 臘 蠟 42. 辣 | ㄜ | 25. 雜 27. 劓 駝 45a. 扎 札
| ㄜ | 27. 擇 44a. 察 | ㄜ | 27. 宴 44a. 毅

Corr. 19. /o/ : /o/ : /o/

| ㄆ | 2a. 波 玻 簸 | ㄆ | 2a. 坡 婆 | ㄇ | 2a. 魔 磨 摩 86. 摸 摹 | ㄣ |
12. 多 2a. 朵 | ㄏ | 12. 拖 駝 2a. 妥 | ㄣ | 12. 羅 鐸 蘿 羅 2a.
駱 駝 螺 | ㄜ | 12. 左 | ㄜ | 12. 搓 磋 2a. 挫 | ㄜ | 2a. 鎖 | ㄋ | 12.
哥 歌 2a. 戈 鍋 果 菓 | ㄏ | 12. 可 2a. 科 | ㄋ | 12. 我 | ㄏ | 12.
河 何 荷 2a. 和 禾 火 夥 | ㄏ | 12. 俄 蛾 鵝 峨 阿

Corr. 1. /i:/ /i:/ /i/

|P| 4a. 比 7b. 彼 |ph| 4a. 琵琶 4b. 鄙 7a. 脾皮疲 16a. 批
 |m| 4b. 眉 7a. 彌 16a. 迷未 |t| 16a. 低抵底 |th| 16a. 梯堤提
 啼題體 |l| 4a. 梨 5. 裡里裡理李 7a. 瑞離離 16a. 翠
 禮 |n| 4a. 肌几 5. 箕基紀己 6a. 機譏幾 16a. 雞臍擠
 |ts| 5. 欺期旗其 6a. 宣 7a. 騎奇 16a. 啓妻齊 |ʃ|
 4a. 呢 5. 疑擬你 7a. 宜儀 16a. 泥 |n| 5. 嬉熙禧喜
 6a. 希稀 16a. 西洗 |ʒu| 4a. 夷 5. 醫己矣 6a. 衣依 7a.
 椅移倚

Corr. 2. /i:/ /i:/ /i/

|P| 4a. 譬 4b. 祕備 7a. 被避 16a. 敬閉 |ph| 4a. 庇 |n| 4a.
 寐 16a. 謎 |t| 16a. 帝第弟 |th| 16a. 剃涕 |l| 4a. 利痢 5. 吏
 16a. 例厲勵 16a. 麗 |n| 5. 記忌 6a. 既 7a. 技枝寄 16a.
 祭際 16a. 繼計濟 |ts| 4a. 器棄 6a. 氣 7a. 企 |ʃ|
 7a. 議 16a. 藝 9. 7a. 戲 16a. 系細 |ʒu| 5. 意異 7a. 易蟻

Corr. 3. /i:/ /i:/ /i/

|P| 4a. 鼻 5. 筆必畢 69a. 逼 77a. 壁 |ph| 5. 匹 |n| 5. 密
 蜜 |t| 77a. 滴敵 |th| 77a. 踢 |l| 39. 立 5. 栗 69a. 力 77a.
 的歷 9. 39. 急級及集 69. 棘極 76. 積 77a. 擊 |ts| 5.
 七漆 77a. 戚 |n| 16a. 婿 39. 習 5. 膝蟋 76. 惜席夕
 77a. 錫 |ʒu| 39. 揖 5. 一 76. 益譯

Corr. 4 /iu:/ /iu:/ /iu/

|l| 87. 驢呂旅 |n| 87. 居舉 88. 拘駒 |ts| 87. 渠 88. 區趙
 |ʃ| 87. 士 |n| 4b. 雖 87. 虛許 88. 須 |ʒu| 87. 魚漁餘
 譽語 88. 愚雨

Corr. 5. /iü/: /iü/: /iü/

|l| 87. 盧 |n| 87. 巨 鋸 據 88. 句 具 娶 |t| 88. 趣 |n| 46. 遂
146. 總 87. 絮 序 |m| 66. 慰 85. 玉 裕 87. 預 御 88. 茅 裕
寓

Corr. 6. /iü/: /iü/: /iü/

|n| 60. 橘 83b 菊 85. 局

Corr. 7. /u/: /u/: /u/

|p| 86. 補 |p| 86. 鋪 蒲 普 |m| 93. 母 拇 牡 |f| 86. 呼 胡 湖 壺
糊 糊 孤 虎 88. 夫 敷 扶 府 俯 腑 斧 撫 腐 |t| 86. 都 堵 睹 賭
|t| 86. 塗 圖 途 土 |l| 86. 奴 帑 廬 鑪 蘆 努 滷 魯 |ts| 86. 租 組
祖 87. 豬 諸 煮 88. 蛛 株 朱 主 |ts| 85. 觸 86. 粗 87. 除
初 鋤 杵 楚 88. 厨 |s| 86. 穌 蘇 87. 蔬 梳 舒 書 暑 鼠 88.
輸 殊 |s| 87. 如 88. 儒 |n| 86. 姑 孤 古 估 鼓 賈 股 |t| 86.
枯 藉 苦 |m| 86. 娛 烏 五 午 88. 無 巫 誣 武 舞 侮

Corr. 8. /ü/: /ü/: /ü/

|p| 86. 布 步 捕 93. 部 |p| 86. 鋪 |f| 86. 戶 互 護 88. 父 賦
傅 付 附 94. 婦 富 副 |t| 86. 度 渡 |t| 86. 吐 兔 |l| 86. 怒
路 露 |ts| 87. 助 88. 駐 註 炷 注 蛀 住 鑄 |ts| 86. 醋 87. 處
|s| 60. 術 述 86. 訴 素 87. 庶 怒 署 著 88. 樹 |n| 86. 故 固
顧 雇 |t| 86. 庫 |m| 86. 悞 悟 88. 務 霧

Corr. 9. /ü/: /ü/: /u/

|p| 56. 不 |p| 83a. 卜 84. 僕 |m| 83a. 木 沐 83b. 目 牧 |f| 56. 弗
佛 佛 83b. 福 幅 蝠 複 腹 伏 復 服 |t| 83a. 獨 讀 84. 篤 督 毒
85. 贖 |t| 56. 突 |l| 60. 律 83a. 鹿 祿 83b. 六 陸 85. 錄 綠
|ts| 83b. 竹 築 逐 85. 燭 |ts| 60. 出 85. 觸 |s| 83b. 叔 淑 熟
85. 蜀 屬 |s| 39. 入 85. 辱 |n| 56. 骨 83a. 谷 穀 |t| 56. 窟
83a. 哭 86. 跼 |m| 83a. 屋

Corr. 10. /i/ : /i/ : /i/

|ts| 4a. 脂資雉 旨指姊 5. 芝止滋子 7a. 知如支枝肢紙
只 7b. 隻 |tʂ| 4a. 蓬簪 5. 持駐齒慈辭祠 7a. 馳池侈
此 |s| 4a. 師獅獅私 5. 尸詩時使始絲司思死 7a.
施斯厮

Corr. 11. /i/ : /i/ : /i/

|ts| 4a. 致至 5. 志誌字 7a. 智翅 14a. 制製 |tʂ| 7a. 薊賜
|s| 4a. 視示四 5. 士仕市事試寺似 7a. 是氏 14a. 世勢
誓逝 6a. 武飾

Corr. 12. /i/ : /i/ : /i/

|ts| 4a. 贄置值植 3a. 執 4a. 質極 6a. 直織 |tʂ| 14. 秩
7a. 尺赤 |s| 3a. 十拾湮 4a. 實失室 6a. 食識釋 7a. 適
石 |ʃ| 4a. 日

Corr. 13. /e/ : /ei/ : /e/

|ts| 這 3a. 遞者蔑 |tʂ| 3a. 車擣 |s| 3a. 蛇賒奢捨社射舍
|ʃ| 3a. 惹

Corr. 14. /è/ : /ǎ/ : /ǎ/

|p| 68a. 北 7a. 百柏伯白 |pʰ| 7a. 拍魄迫 |m| 6a. 默墨 75b.

Corr. 15. /è/ /ô/ /ä/

| ㄏ | 74. 格 74. 革 隔 隔 | ㄏ | 68. 刻 克 74. 客 | ㄣ | 74. 額 | ㄥ |
68. 黑 74. 嚇 74. 核

Corr. 16. /ē/ /ö/ /ï/

| ㄉ | 34. 給

Corr. 17. /ä/ /ä/ /ä/

| ㄆ | 32. 巴 芭 把 | ㄆ | 32. 爬 爬 怕 | ㄇ | 32. 麻 麻 馬 馬 | ㄣ | 102.
大 | ㄏ | 12. 他 | ㄣ | 12. 那 32. 拏 25. 拉 | ㄘ | 32. 爹 梓 昨 乍
| ㄘ | 32. 茶 叔 差 叉 查 | ㄣ | 32. 紗 沙 沙 灑

Corr. 18. /ä/ /ä/ /ä/

| ㄆ | 46. 八 | ㄆ | 46. 拔 | ㄇ | 43. 抹 | ㄈ | 31. 法 乏 47. 發 髮 伐 筏
罰 | ㄣ | 25. 搭 答 42. 達 | ㄏ | 25. 踏 26. 塔 塌 42. 獺 | ㄣ |
25. 納 26. 臘 蠟 42. 辣 | ㄘ | 25. 雜 27. 刺 駘 42. 扎 札
| ㄘ | 27. 播 44. 察 | ㄣ | 27. 寡 44. 殺

Corr. 19. /o/ /o/ /o/

| ㄆ | 22. 波 玻 簸 | ㄆ | 22. 坡 婆 | ㄇ | 22. 魔 磨 摩 26. 摸 摹 | ㄣ |
12. 多 22. 朵 | ㄏ | 12. 拖 駝 22. 妥 | ㄣ | 12. 羅 鐸 蘿 落 22.
騾 駝 螺 | ㄘ | 12. 左 | ㄘ | 12. 搓 差 22. 挫 | ㄣ | 22. 鎖 | ㄥ | 12.
哥 歌 22. 戈 鍋 果 菓 | ㄏ | 12. 可 22. 科 | ㄣ | 12. 我 | ㄏ | 12.
河 何 荷 22. 和 禾 火 夥 | ㄣ | 12. 俄 蛾 鵝 峨 阿

2 2 1	21.	/liou-hio-ser/	[21:21:33]	'student studying abroad';
2 2 2	22.	/pe-zī-khe/	[21:21:21]	'whooping cough';
2 2 3	23.	/phu-thau-kiou/	[21:21:53]	'port-wine';
2 2 4	24.	/la-pa-fan/	[21:21:12]	'special rice dish eaten on the 8th day of the 12th month';
2 3 1	25.	/kio-pan-kai/	[21:55:33]	'street name';
2 3 2	26.	/huang-su-ler/	[21:55:21]	'skunk';
2 3 3	27.	/kio-tsi-mer/	[21:55:31]	'toe';
2 3 4	28.	/ngi-suei-kiang/	[21:55:12]	'bricklayer';
2 4 1	29.	/hong-ta-i/	[21:11:33]	'red overcoat';
2 4 2	30.	/iou-iun-tshī/	[21:11:21]	'swimming pool';
2 4 3	31.	/iou-tsa-mer/	[21:11:53]	'locust';
2 4 4	32.	/u-hian-tian/	[21:11:12]	'wireless';
3 1 1	33.	'kuei-ten-kuer/	[55:33:33]	'owl';
3 1 2	34.	/san-hi-zen/	[55:33:21]	'people from Shensi';
3 1 3	35.	/fang-sa-tshang/	[55:33:31]	'cotton mill';
3 1 4	36.	/hai-kiau-mier/	[55:33:12]	'ground red pepper';
3 2 1	37.	/hiau-hio-ser/	[55:21:33]	'primary school student';
3 2 2	38.	/lau-lan-men/	[55:21:21]	'the Old South Gate';
3 2 3	39.	[suei-phin-tshī/	[55:21:53]	'a level';
3 2 4	40.	/pian-thau-hian/	[55:21:12]	'the tonsils';
3 3 1	41.	/ta-ho-ki/	[55:53:33]	'cigarette lighter';
3 3 2	42.	/hi-lian-phen/	[55:53:21]	'wash-basin';
3 3 3	43.	/lau-hiau-kie/	[55:53:31]	'old spinster';
3 3 4	44.	/ma-thong-kai/	[55:53:12]	'closet lid';
3 4 1	45.	/ta-tsi-ki/	[55:11:33]	'typewriter';
3 4 2	46.	/ta-phi-tshong/	[55:11:21]	'beetle';
3 4 3	47.	/ta-khi-thong/	[55:11:53]	'a pump';
3 4 4	48.	/mian-tian-hua/	[55:11:12]	'Burmese';
4 1 1	49.	/ian-o-thang/	[213:45:33]	'bird's nest soup';
4 1 2	50.	/uang-kiang-lou/	[213:45:21]	'the Pavilion overlooking the River';
4 1 3	51.	/ti-tsong-hai/	[213:45:31]	'the Mediterranean';
4 1 4	52.	/si-tshuan-tshai/	[213:45:12]	'Sich'uanese food';
4 2 1	53.	/tsi-hi-pan/	[213:21:33]	'self-study group';
4 2 2	54.	/si-kio-se/	[213:21:21]	'lizard';
4 2 3	55.	/lai-ke-pau/	[213:21:53]	'toad';
4 2 4	56.	/pau-kue-si/	[213:21:12]	'the Monastery that recom- penses the country';

- 4 3 1 57. /tso-pan-tshuang/ [213:55:33] 'boils on the buttocks';
 4 3 2 58. /si-u-lu/ [213:55:21] 'the 4-5-6 restaurant';
 4 3 3 59. /ta-thuei-u/ [213:55:31] 'can-can';
 4 3 4 60. /tian-in-uan/ [213:55:12] 'cinema';
 4 4 1 61. /tsau-hiang-ki/ [213:11:33] 'camera';
 4 4 2 62. /iun-ho-tshuan/ [213:11:21] 'freighter';
 4 4 3 63. /kau-hua-tsi/ [213:11:53] 'beggar';
 4 4 4 64. /kua-hua-hin/ [213:11:12] 'registered mail'.

The tone sandhi features of the three-syllabic compounds listed above are summarized in the following table:

Tone	initial position	medial position	final position
1	[45]	[33], after tone 1 and 3 [45], after tone 2 and 4	[33]
2	[21]	[21]	[21]
3	[55]	[53], after tone 1 and 3 [55], after tone 2 and 4	[31], after tone 1 and 3 [53], after tone 2 and 4
4	[213]	[11]	[12]

- | | | | |
|----------|----------|----------|----------|
| 1. 高中生兒 | 2. 花生糖 | 3. 私生子 | 4. 新醫院 |
| 5. 新學生兒 | 6. 偷油婆 | 7. 巴壁虎兒 | 8. 孤兒院 |
| 9. 三等車 | 10. 溫水瓶 | 11. 三小姐 | 12. 開水蛋 |
| 13. 新大衣 | 14. 西藏人 | 15. 登記所 | 16. 西藏話 |
| 17. 黃包車 | 18. 撲燈蛾兒 | 19. 腳尖舞 | 20. 紅燒肉 |
| 21. 留學生 | 22. 百日咳 | 23. 葡萄酒 | 24. 臘八飯 |
| 25. 腳板街 | 26. 黃鼠狼兒 | 27. 腳指拇兒 | 28. 泥水匠 |
| 29. 紅大衣 | 30. 游泳池 | 31. 油炸猛兒 | 32. 無線電 |
| 33. 鬼燈哥兒 | 34. 陝西人 | 35. 紡紗廠 | 36. 海椒麵兒 |
| 37. 小學生兒 | 38. 老南門 | 39. 水平尺 | 40. 扁桃腺 |
| 41. 打火機 | 42. 洗臉盆 | 43. 老小姐 | 44. 馬桶蓋 |
| 45. 打字機 | 46. 打屁蟲 | 47. 打氣筒 | 48. 綢甸話 |
| 49. 燕窩湯 | 50. 望江樓 | 51. 地中海 | 52. 四川菜 |
| 53. 自習班 | 54. 四腳蛇 | 55. 癩格寶 | 56. 報國寺 |
| 57. 坐板瘡 | 58. 四五六 | 59. 大腿舞 | 60. 電影院 |
| 61. 照像機 | 62. 運貨船 | 63. 叫化子 | 64. 挂號信 |

COMPARISON BETWEEN THE DIALECTS

Purely phonetic divergences between the dialects have been described above. In this chapter we shall discuss only the systematic divergences, i.e. such divergences as are revealed in the systematic, quasi-phonemic transcription.

The main systematic divergences between the three dialects are shown in the following correspondence charts, which list 73 numbered correspondence series (below abbreviated as corr.). The Ch'engtū finals are given in the top row and the corresponding Loshan and Omei finals in the two bottom rows. The last row gives the actual number of recorded instances within each correspondence series.

List containing these instances of correspondence are added after the charts. Numbers occurring in these lists refer to the Kuang yün rimes as tabulated by Karlgren. The two rimes *ĭâ** and *ĭuâ**, which are not included in Karlgren's list, have been inserted as 1 b and 2 b respectively.¹⁾

One correspondence series — /iò:/ũ:/ũ/ — has for practical reasons not been included in the charts. The few recorded instances of this correspondence are given in the list 34 a below.

A comparison between the dialects reveals that there is on the whole a one-to-one correspondence as far as initials are concerned. The only major systematic difference results from the fact that the oppositions /ngi:/li/, /ngiu:/liu/, /ngian:/lian/ etc. of the Ch'engtū dialect do not obtain in Loshan and Omei, which dialects have /li/, /liu/ and /lian/ etc. for Ch'engtū /ngi/, /ngiu/ and /ngian/. The correspondence charts are based on the Ch'engtū dialect and forms like /ngi/ occurring in these charts will therefore have to be interpreted as /ngi:/li:/li/.

The complementary distribution of Ch [ɲ] and [ŋ] has made me prefer to treat the palatal affricates [tɕ], [tɕ'] and the palatal fricative [ç] as conditioned variants of /k/, /kh/ and /h/ respectively. L and O [tɕ], [tɕ'] and [ç] could equally well have been regarded as conditioned variants of /ts/, /tsh/ and /s/.

The initial system of the Sich'uanese dialects studied by N. C. Scott²⁾ appears to be identical with that of the Ch'engtū dialect. Scott's treatment differs widely from the present one. What has here been termed medial /i/, /iu/ and /u/ has by Scott been regarded as palatalization, labio-palatalization and labio-velarization of the initial. Instead of regarding [ŋ] and [ɲ] as conditioned variants of one initial term Scott has chosen to treat the latter as *ny*, i.e. *n* followed by palatal friction. The Ch'engtū opposition /ngi:/li/, which obtains in one of the dialects studied by Scott, is described as *nyi:lyi*, i.e. *n* followed by palatal friction + *i* and *n* without palatal friction + *i* respectively.

Some of the most interesting divergences between the finals of the three

¹⁾ Li Yung, Ts'ie yün yin hi, Chung kuo k'o hŭe yüan yü yen hŭe chuan k'an, Peking, 1952., p. 47 and p. 95.

²⁾ N. C. Scott, The Monosyllable in Szechuanese, Bulletin of the School of Oriental and African Studies, vol. XII, part 1., 1947.

dialects relate to the fact that the dialect of Loshan does not possess the vowel phoneme /e/:

- corr. 13. /e/ : /ei/ : /e/
- corr. 14. /è/ : /ǎ/ : /ǎ/
- corr. 15. /è/ : /ǒ/ : /ǎ/
- corr. 16. /ē/ : /ǒ/ : /ǐ/
- corr. 25. /ie/ : /i/ : /ie/
- corr. 26. /iě/ : /ǐ/ : /iě/
- corr. 27. /iè/ : /ǐ/ : /ǐ/
- corr. 28. /iè/ : /ǐ/ : /iě/
- corr. 35. /iue/ : /iu/ : /iue/
- corr. 36. /iue/ : /iu/ : /iue/
- corr. 37. /iuè/ : /iǔ/ : /iǔě/
- corr. 38. /iuè/ : /iǔ/ : /iǒ/
- corr. 39. /uè/ : /ǒ/ : /ǒ/
- corr. 40. /uè/ : /ǔ/ : /uǎ/
- corr. 41. /uè/ : /uǎ/ : /uǎ/
- corr. 55. /er/ : /l/ : /er/
- corr. 56. /ěr/ : /l̥/ : /ěr/

I have elsewhere¹⁾ tried to demonstrate how the 'displacement' of /e/, which vowel must have existed at a transitory stage in the development of the Loshan dialect, probably was conditioned by the zero realization of /n/ in the finals /an ian iuan uan/ [a iɛ yɛ ua].

Corr. 55. /er/ : /l/ : /er/ and corr. 56. /ěr/ : /l̥/ : /ěr/ are of special interest. L /l/ could be regarded as a realization of /zǐ/ : /zǐ/ [l] 'son' and /zǐ/ [zə] 'sun'. This treatment would in fact be in strict conformity with the historic development of the syllable. Ch and O /er/, however, cannot be so treated, as Ch possesses the forms /èr/ 'son' and /zǐ/ 'sun' and O possesses the forms /ěr/ 'two' and /zǐ/ 'sun'.

One of the dialects studied by N. C. Scott²⁾ appears to be structurally similar to the Ch'engtū dialect. The syllables *er* and *zī* of this dialect have both been represented by *zi*. The difference in realization has been regarded as conditioned by tone: with tone 5 *zi* is realized as 'z', with other tones as 'a kind of retroflex æ'.³⁾ The difficulty is that the dialect in question does not possess tone 5, or, rather, that tone 5 is an abstraction introduced to make possible a systematic transcription adequate for the two dialects studied by Scott. In fact, the construction of such an intra-dialectal transcription is one of the main purposes of Scott's study.

¹⁾ A Note on two Szech'uanese Dialects, *Studia Serica Bernhard Karlgren Dedicata*, Copenhagen, 1959., p. 92.

²⁾ N. C. Scott, *The Monosyllable in Szechuanese*, *Bulletin of the School of Oriental and African Studies*, vol. XII, part 1., 1947.

³⁾ N. C. Scott, *The Monosyllable in Szechuanese*, p. 204.

The Loshan finals [ɛi uɛi ɛn uɛn] could be phonemically treated as /oi uoi on uon/. In the present study these finals have been transcribed as /ei uei en uen/ in conformity with the corresponding finals in Ch'engtu and Omei.

In a strictly phonemic analysis our finals /i/ and /ī/ could be treated as members of one phoneme, preferably represented by /i/. Ch and O /i/ would then comprise two allophones: [ɿ] occurring in /tsi tshi si zi/ and [i] occurring elsewhere. L /i/ would comprise four allophones, viz. [ɿ], [ə], [i] and [iɿ], which terms in the present study are treated as /ī/, /ī̄/, /i/ and /i/ respectively. L [ɿ] could also be treated as /zi/.

It would be possible to treat L /a/, /ä/ and the final in /ko kho ngo ho/ as allophones of one phoneme. With this treatment the distinction between L /u/ and /o/ would be neutralized in syllables accompanied by tone 5.

For a comparison between the tone categories of the three dialects see sub *The evolution of the Ancient Chinese tones* below.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.
Ch	i	ĩ	ì	iu	iũ	iù	u	ũ	ù	ĩ	ĩ	ì	e	è	è	ē	a	à	o	õ	õ	ò	ò	ò
p	比	備	筆				補	步	不					北			把	八	波	播	撥			
ph	皮	庇	足				鋪	鋪	卜					魄			怕	拔	坡	破	潑			
m	眉	寐	蜜				母		木					墨			馬	抹	魔	幕	末			
f							胡	父	佛									法						
t	低	弟	敵				賭	度	獨					得			大	答	多	墮	奪			
th	堤	弟	踢				土	免	突					特			他	懶	駝		脫			
l	梨	利	力	旅	慮		奴	路	律					助			拏	蠟	羅	孺	落			
ts							祖	助	竹	知	字	質	蔗	摺			拿	雜	左	坐	作			
tsh							祖	醋	出	持	荊	秩	車	撤			差	察	搓	錯	濁			
s							書	樹	叔	詩	四	斗	蛇	舌			沙	殺	鎖		說			
z							如		入				日	惹	熱						弱			
k	難	記	集	居	句	菊	古	故	骨							格	給	ka	歌	過				各
kh	欺	器	漆	區	趣		枯	庫	哭							客		kha	可	擱	課			蛤
ng	宜	藝		女												額		mga	我					惡
h	西	細	習	須	序											黑		ha	河	賀	活	忽	合	
zero	衣	意	一	魚	預		五	霧	屋									a	俄	卧	握	物		
L	i	ĩ	ì	iu	iũ	iù	u	ũ	ù	ĩ	ĩ	ì	ei	ä	ö	ö	a	ä	o	õ	õ	ü	ü	ö
O	i	ĩ	ì	iu	iũ	iù	u	ũ	ù	ĩ	ĩ	ì	e	ä	ä	ĩ	ä	ä	o	õ	ü	ü	ö	ö
	80	4t	40	22	20	3	90	t1	t2	47	29	24	14	42	11	1	29	30	47	18	1	34	3	11

	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ch	ie	iě	iè	iè	ia	ià	iò	iò	iò	iò	iue	iùè	iùè	iùè	uè	uè	uè	uà	uà	uà	uà
p				別	癘																
ph			餅		Phia																
m				滅																	
f																					
t	爹			蝶																	
th				帖																	
l			瀝	獵				掠													
t's																			抓		
tsh																					
s																			厦	刷	
z																			厦		
k	姐	借	寂	接	加	夾		脚				絕	決		國				瓜	刮	
Kh	且		乞	切	恰	曲	確			茄	摘	戲			關				誇		
ng			業	ngia																	
h	寓	謝	息	協	夏	瞎	戌	學			靴	雪	或					花	滑		
zero	也	夜		葉	牙	鴨	育	約	役		悅	月						瓦		襪	
L	i	ĩ	ĩ	ĩ	ia	iã	iũ	iũ	iũ	iũ	i' iu	iũ	iũ	ö	ũ	uã	ua	a	a	uã	
O	ie	iě	ĩ	iě	ia	iã	iũ	iö	iě	ĩ	iue	iue	iue	iö	ö	uã	uã	ua	ua	a	uã
	8	4	9	34	24	7	1	15	2	2	1	2	6	5	2	2	1	2	11	1	4

	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73
Ch	ei	ai	ou	au	en	an	ong	ang	ang	er	ěr	iai	iai	iou	iau	ian	ian	in	iong	iäng	uei	uai	uen	uan	ueng	uäng	iün	iüan
p	悲	拜		保	本	半	彌	邦							表	辦	冰											
ph	陪	脾		跑	盆	判	朋	傍							嫖	篇	品											
m	美	埋		毛	門	滿	夢	忙							妙	面	明											
f	非			分	帆	風	芳																					
t		待	斗	刀	數	但	東	當						丟	釣	店	丁		堆					端				
th		台	偷	桃	吞	談	同	湯							條	天	停		推				團					
l		來	漏	老	論	男	龍	浪						流	料	連	憐	林	涼	累			暖					
ts		災	走	早	針	暫	中	張	翽												追	準	專	莊				
tsh		才	抽	抄	村	球	沖	腸	倉												吹	揣	春	川	牀			
s		賽	手	少	深	三	宋	常	桑												水	裴	蛇	駝	霜			
z			素	繞	任	染	絨	讓													銳	潤	鍊					
k		該	狗	高	根	干	工	剛			界		兀	交	件		今	匠	鬼	怪	棍	棺	光	君	倦			
Kh		聞	扣	考	肯	坎	恐	庫						秋	橋	錢	浸	窮	強	塊	快	細	寬	況	襪			
ng		愛	嘔	襖	恩	暗	昂							牛	尿	念	凝	娘										
h		孩	厚	好	很	汗	紅	項						休	孝	仙	心	兄	香	灰	壞	魂	歡	皇	熏	宣		
zero						艱		兒	二	延	油	要	眼				音	用	羊	位	外	問	完	翁	王	雲	員	
L	ei	ai	ou	au	en	an	ong	ang	ang	l	ĩ	iai	ian	iou	iau	ian	ing	ing	iong	iäng	uei	uai	uen	uan	ueng	uäng	iün	iüan
O	ei	ai	ou	au	en	an	ong	ang	uäng	er	ěr	iai	ian	iou	iau	ian	in	in	iong	iäng	uei	uai	uen	uan	ueng	uäng	iün	iüan
	20	69	55	75	94	101	88	61	9	3	1	4	2	37	46	89	1	106	11	44	71	10	19	43	1	28	14	31

Corr. 1. /i/:/i/:/i/

|P|4a. 比 7b. 彼 |ph|4a. 琵 4b. 鄙 7a. 脾皮疲 16a. 批
 |m|4b. 眉 7a. 彌 16a. 迷米 |t|16a. 低抵底 |th|16a. 梯堤提
 啼題體 |l|4a. 梨 5. 裡里裡理李 7a. 瑞離離 16a. 翠
 禮 |n|4a. 肌几 5. 箕基紀己 6a. 機譏幾 16a. 雞臍擠
 |ts|5. 欺期旗其 6a. 宣 7a. 騎奇 16a. 啓妻齊 |ʃj|
 4a. 呢 5. 疑擬你 7a. 宜儀 16a. 泥 |n|5. 嬉熙禧喜
 6a. 希禔 16a. 西洗 |ʃuo|4a. 夷 5. 醫己矣 6a. 衣依 7a.
 椅移倚

Corr. 2. /ĩ/:/ĩ/:/ĩ/

|P|4a. 譬 4b. 祕備 7a. 被避 16a. 敬閉 |ph|4a. 庇 |n|4a.
 寐 16a. 詆 |t|16a. 帝第弟 |th|16a. 剃涕 |l|4a. 利痢 5. 吏
 16a. 例厲勵 16a. 麗 |n|5. 記忌 6a. 既 7a. 技枝寄 16a.
 祭際 16a. 繼計濟 |ts|4a. 器棄 6a. 氣 7a. 企 |ʃj|
 7a. 議 16a. 藝 9. 7a. 戲 16a. 系細 |ʃuo|5. 意異 7a. 易蟻

Corr. 3. /ì/:/ì/:/ì/

|P|4a. 鼻 59. 筆必畢 69a. 逼 77a. 壁 |ph|59. 匹 |n|59. 密
 蜜 |t|77a. 滴敵 |th|77a. 踢 |l|39. 立 59. 栗 69a. 力 77a.
 的歷 9. 39. 急級及集 69. 棘極 76. 積 77a. 擊 |ts|59.
 七漆 77a. 戚 |n|16a. 婿 39. 習 59. 膝蟋 76. 惜席夕
 77a. 錫 |ʃuo|39. 揖 59. 一 76. 益譯

Corr. 4 /iu/:/iu/:/iu/

|l|87. 驢呂旅 |n|87. 居舉 88. 拘駒 |ts|87. 渠 88. 區趨
 |ʃj| 87. 士 |n|4b. 雖 87. 虛許 88. 須 |ʃuo|87. 魚漁餘
 譽語 88. 愚雨

Corr. 5. /iǔ/: /iǔ/: /iǔ/

|l| 87. 盧 |n| 87. 巨 鋸 據 88. 句 具 娶 |t| 88. 趣 |t| 46. 遂
146. 總 87. 絮 序 |zu| 66. 慰 85. 玉 裕 87. 預 御 88. 芋 裕
寓

Corr. 6. /iù/: /iù/: /iù/

|n| 60. 橘 836. 菊 85. 局

Corr. 7. /u/: /u/: /u/

|P| 86. 補 |P| 86. 鋪 蒲 普 |m| 93. 母 拇 牡 |f| 86. 呼 胡 湖 壺
糊 糊 狐 虎 88. 夫 敷 扶 府 俯 腑 斧 撫 腐 |t| 86. 都 堵 睹 賭
|t| 86. 塗 圖 途 土 |l| 86. 奴 拏 廬 鐘 蘆 努 滷 魯 |ts| 86. 租 組
祖 87. 豬 諸 煮 88. 蛛 株 朱 主 |ts| 85. 觸 86. 粗 87. 除
初 鋤 杵 楚 88. 厨 |s| 86. 穌 蘇 87. 蔬 梳 舒 書 暑 鼠 88.
輸 殊 |z| 87. 如 88. 儒 |n| 86. 姑 孤 古 估 鼓 賈 股 |t| 86.
枯 箍 苦 |zu| 86. 娛 烏 五 午 88. 無 巫 誣 武 舞 侮

Corr. 8. /ü/: /ü/: /ü/

|P| 86. 布 步 捕 93. 部 |P| 86. 鋪 |f| 86. 戶 互 護 88. 父 賦
傅 付 附 94. 婦 富 副 |t| 86. 度 渡 |t| 86. 吐 兔 |l| 86. 怒
路 露 |ts| 87. 助 88. 駐 註 炷 注 蛀 住 鑄 |ts| 86. 醋 87. 處
|s| 60. 術 述 86. 訴 素 87. 廢 怒 署 著 88. 樹 |n| 86. 故 固
顧 雇 |t| 86. 庫 |zu| 86. 娛 悟 88. 務 霧

Corr. 9. /ü/: /ü/: /u/

|P| 56. 不 |P| 834. 卜 84. 僕 |m| 834. 木 沐 836. 目 牧 |f| 58. 弗
佛 佛 836. 福 幅 蝠 複 腹 伏 復 服 |t| 834. 獨 讀 84. 篤 督 毒
85. 贖 |t| 56. 突 |l| 60. 律 834. 鹿 祿 836. 六 陸 85. 錄 綠
|ts| 836. 竹 築 逐 85. 燭 |ts| 60. 出 85. 觸 |s| 836. 叔 淑 熟
85. 蜀 屬 |z| 39. 入 85. 辱 |n| 56. 骨 834. 谷 穀 |t| 56. 窟
834. 哭 86. 跼 |zu| 834. 屋

Corr. 10. /i/ : /i/ : /i/

|ts| 4a. 脂噴雉 旨指姊 5. 芝止滋子 7a. 知知支枝肢紙
只 7a. 隻 |tʂ| 4a. 邊簪 5. 持耻齒慈辭祠 7a. 馳池侈
此 |s| 4a. 師獅獅私 5. 尸詩時使始絲司思死 7a.
施斯厮

Corr. 11. /i/ : /i/ : /i/

|ts| 4a. 致至 5. 志誌字 7a. 智翅 14a. 制製 |tʂ| 7a. 荊賜
|s| 4a. 視示四 5. 士仕市事試寺似 7a. 是氏 14a. 世勢
誓逝 6a. 式飾

Corr. 12. /i/ : /i/ : /i/

|ts| 4a. 贄置值植 3a. 執 5a. 質姪 6a. 直織 |tʂ| 5a. 秩
7a. 尺赤 |s| 3a. 十拾湮 5a. 實失室 6a. 食讖釋 7a. 適
石 |ʂ| 5a. 日

Corr. 13. /e/ : /ei/ : /e/

|ts| 這 3c. 遞者蔑 |tʂ| 3c. 車擣 |s| 3c. 蛇賒奢捨社射舍
|ʂ| 3c. 惹

Corr. 14. /è/ : /ǎ/ : /ǎ/

|p| 68a. 北 74a. 百柏伯白 |pʰ| 74a. 拍魄迫 |m| 64a. 默墨 75a.

Corr. 15. /è/ /ö/ : /ä/

| ㄏ | ㄗㄞ 格 ㄗㄞ 革 隔 隔 | ㄏㄜ | ㄌㄞ 刻 克 ㄗㄞ 客 | ㄋㄞ | ㄗㄞ 額 | ㄌ |
ㄌㄞ 黑 ㄗㄞ 赫 ㄗㄞ 核

Corr. 16. /ē/ : /ō/ : /ī/

| ㄉ | ㄗㄞ 給

Corr. 17. /a/ : /a/ : /ä/

| ㄆ | ㄗㄞ 巴 芭 把 ㄆㄞ ㄗㄞ 爬 爬 怕 | ㄇ | ㄗㄞ 麻 麻 馬 馬 | ㄗ | ㄌㄞ 大 | ㄏ | ㄌㄞ 他 | ㄌ | ㄌㄞ 耶 ㄗㄞ 拏 ㄗㄞ 拉 | ㄗ | ㄗㄞ 爹 梓 昨 昨
| ㄗ | ㄗㄞ 茶 叔 若 叉 查 | ㄗ | ㄗㄞ 紗 砂 沙 灑

Corr. 18. /ä/ : /ä/ : /ä/

| ㄆ | ㄗㄞ 八 | ㄆ | ㄗㄞ 拔 | ㄇ | ㄗㄞ 抹 | ㄗ | ㄗㄞ 法 乏 ㄗㄞ 發 髮 伐 筏
罰 | ㄗ | ㄗㄞ 搭 答 ㄗㄞ 達 | ㄏ | ㄗㄞ 踏 ㄗㄞ 塔 塌 ㄗㄞ 獺 | ㄌ |
ㄗㄞ 納 ㄗㄞ 臘 蠟 ㄗㄞ 辣 | ㄗ | ㄗㄞ 離 ㄗㄞ 刺 駝 ㄗㄞ 扎 札
| ㄗ | ㄗㄞ 插 ㄗㄞ 察 | ㄗ | ㄗㄞ 寧 ㄗㄞ 穀

Corr. 19. /o/ : /o/ : /o/

| ㄆ | ㄗㄞ 波 玻 簸 | ㄆ | ㄗㄞ 坡 婆 | ㄇ | ㄗㄞ 魔 磨 摩 ㄗㄞ 摸 摹 | ㄗ |
ㄌㄞ 多 ㄗㄞ 朵 | ㄏ | ㄌㄞ 拖 駝 ㄗㄞ 妥 | ㄌ | ㄌㄞ 羅 鑼 蘿 蓏 ㄗㄞ
驢 轔 螺 | ㄗ | ㄌㄞ 左 | ㄗ | ㄌㄞ 搓 磋 ㄗㄞ 挫 | ㄗ | ㄗㄞ 鎖 | ㄌ | ㄌㄞ
哥 歌 ㄗㄞ 戈 鍋 果 菓 | ㄌ | ㄌㄞ 可 ㄗㄞ 科 | ㄗ | ㄌㄞ 我 | ㄌ | ㄌㄞ
河 何 荷 ㄗㄞ 和 禾 火 夥 | ㄌ | ㄌㄞ 俄 蛾 鵝 莪 阿

Corr. 20. /ö/: /ø/: /õ/

|p| 2a. 播 |ph| 2a. 破 93. 剖 |m| 64a. 暮 |t| 2a. 墮情 |l| 2a.
 懦 |ts| 1a. 佐 2a. 坐座 |tsh| 86. 錯 |n| 1a. 個 2a. 過 |h|
 1a. 賀 2a. 禍貨 |ɲuo| 1a. 餓 2a. 臥

Corr. 21. /ö/: /õ/: /uä/

|kh| 2a. 課

Corr. 22. /ò/: /ü/: /õ/

|p| 43. 撥鉢 64a. 博蒲泊 79. 駁 |ph| 43. 潑 |m| 43. 末 64a.
 莫漢冥 |t| 43. 奪 |th| 43. 脫 64a. 託 |l| 64a. 樂格落路
 |ts| 64a. 作昨 64a. 縛 79. 捉 |tsh| 振 79. 濁 |s| 46b. 說 64a. 索
 65. 勺 79. 朔 /ʃ/ 65. 弱若 |hɔ| 42. 喝 43. 活 64b. 瘡 |ɲuo| 79.
 握

Corr. 23. /ò/: /ü/: /ü/

/hò/: /hü/: /fū/ 56. 忽 |ɲuo| 58. 勿物

Corr. 24. /ò/: /õ/: /õ/

|n| 42. 割 64a. 各閣 79. 角 |kh| 25. 恰 26. 瞎 79. 殼 |ɲy|
 64a. 惡 |h| 25. 合金 64a. 鶴

Corr. 25. /ie/: /i/: /ie/

|t| 3a. 爹 |n| 3a. 姐 |kh| 3a. 且 |h| 3a. 窩灣 |ɲuo| 3a. 耶也野

Corr. 26. /iě/: /ĩ/: /iě/

| ㄣ | 32. 借 | ㄏ | 32. 謝 | ㄑㄠ | 32. 夜 | 76. 腋

Corr. 27. /iè/: /ĩ/: /ĩ/

| ㄆ | 76. 僻闢 | 77. 劈 | | ㄌ | 77. 瀝 | | ㄣ | 77. 寂 | | ㄏ | 57. 乞 | | ㄏ | 32. 泣 | 69. 熄息

Corr. 28. /iè/: /ĩ/: /iě/

| ㄆ | 46. 剝 | 59. 澤 | | ㄣ | 46. 滅 | 48. 篋 | | ㄌ | 32. 蝶 | 48. 迭 | | ㄏ | 32. 帖貼 | | ㄌ | 29. 獵 | 46. 列裂 | 46. 劣 | | ㄣ | 29. 接妾捷 | 46. 傑揭 | 48. 結潔節 | 59. 吉 | | ㄏ | 30. 翹 | 48. 切 | /ng/: /l/: /l/ | 30. 業 | 32. 捻 | 46. 孽 | 74. 逆 | | ㄏ | 30. 膏 | 32. 協 | 47. 歇 | 48. 血穴 | 60. 恤 | ㄑㄠ | 29. 葉

Corr. 29. /ia/: /ia/: /ia/

| ㄆ | 48. 瘍 | | ㄣ | 32. 嘉家加袈假架稼駕價嫁 | | ㄏ | 32. 下夏嚇 | 28. 匣 | ㄑㄠ | 32. 衙芽牙雅鴉丫啞亞 | 28. 壓

Corr. 30. /ià/: /iǎ/: /iǎ/

| ㄣ | 27. 夾 | 28. 甲 | | ㄏ | 27. 恰 | | ㄏ | 28. 狹狎 | 44. 瞎 | ㄑㄠ | 28. 鴨

Corr. 31. /iò/: /iǔ/: /iǔ/

| ㄏ | 58. 屈 | 58. 曲 | | ㄏ | 60. 戍 | 83. 蓄蓄 | ㄑㄠ | 69. 域 | 83. 育 | 58. 獄慾

Corr. 32. /iò/:/iü/:/iö/

[九|6a. 脚爵 71. 角覺 | 九h|6a. 卻雀龍 71. 確 | 九|71. 學
[九h|6a. 握崖約藥繪 71. 嶽

Corr. 33. /iò/:/iü/:/ië/

[九|6a. 掠略

Corr. 34. /iò/:/iü/:/i/

[九h|76. 役疫

Corr. 34a. /iò/:/ü/:/ü/

[九ò]:|tsü|:|tsü|85. 足 | 九hò|:|tshü|:|tshü| 83a. 族 | 九ò|:|sü|:|sü| 83a. 連
83b. 宿肅 85. 俗續

Corr. 35. /iue/:/i/:/iue/

[九h|1b. 茹

Corr. 36 /iue/:/iu/:/iue/

[九h|2b. 痛 | 九|2b. 靴

Corr. 37. /iuè/:/iü/:/iuë/

[九|46b. 絕 | 九|46a. 薛 46b. 雪 48a. 屑 | 九h|46b. 悅閱

Corr. 38. /iuè/:/iü/:/iö/

[九|47b. 決 | 九h|47b. 關 | 九h|47b. 月曰越

Corr. 39. /uè/ : /ö/ : /ö/

|h| 68b. 或 75b. 獲

Corr. 40. /uè/ : /ü/ : /uǎ/

|ŋ| 64b. 柳 68b. 國

Corr. 41. /uè/ : /uǎ/ : /uǎ/

|ŋh| 43. 諸

Corr. 42. /ua/ : /ua/ : /ua/

|ʔuo| 3b. 瓦 45b. 挖

Corr. 43. /ua/ : /a/ : /ua/

|ts| 抓 |s| 耍 3a. 厦 |ŋ| 3b. 瓜 剛寡 1a. 掛 |h| 3b. 花華
化 13b. 話

Corr. 44. /ua/ : /a/ : /a/

|ŋh| 3b. 誇

Corr. 45. /uà/ : /uǎ/ : /uǎ/

|s| 44b. 刷 |ŋ| 44b. 刮 |h| 45b. 滑 |ʔuo| 47b. 襪

Corr. 46. /ei/ : /ei/ : /ei/

|p| 46b. 悲 7b. 碑 |ph| 9. 陪培佩 |m| 46b. 美 9. 玫枚梅媒
|f| 6b. 非飛妃肥匪費癆 15b. 廢肺吠

Corr. 47. /ai/: /ai/: /ai/

| P | 11b. 拜 12a. 擺 12b. 裨 13b. 敗 | Ph | 12a. 牌 12b. 派 | ㄣ | 11a.
 埋 12a. 買賣 | t | 8. 怠待貸代 10. 帶 | th | 8. 胎台擡臺
 苔態 10. 泰 | l | 8. 來乃耐 10. 賴癩 | ts | 8. 裁災哉宰
 在再載 11a. 齋 12a. 債 | ts | 8. 精才裁財材採采菜 11a. 豺
 | s | 8. 賽 12a. 曬 ㄋ. 8. 該改 10a. 丐蓋 12a. 銜 | kh | 8. 開
 概 11a. 楷楷 | ㄋ | 8. 哀埃礙愛 10. 艾 12a. 矮 20. 巖
 | h | 8. 孩海亥 | ㄋ | 害 11a. 蟹 12a. 鞋

Corr. 48. /ou/: /ou/: /ou/

| t | 13. 兜斗鬪並痘 | th | 13. 偷投頭抖遘 | l | 13. 漏 | ts | 13.
 走奏 14. 州周洲舟畫 | ts | 14. 抽愁離酬臭 | s | 13. 叟 14.
 收首手. 守受授獸壽 | ㄋ | 14. 肉柔 | ㄣ | 13. 鈎溝狗購構構
 夠 | kh | 13. 扣鉤口 | ㄋ | 13. 謳藕滙 | h | 13. 猴鉤候喉厚後
 候后

Corr. 49. /au/: /au/: /au/

| P | 89. 保寶抱報暴 90. 包飽豹鉤齣 | Ph | 89. 袍 90. 胞泡
 跑炮 | m | 89. 毛冒帽 90. 茅貓 | t | 89. 刀禱島倒到道
 | th | 89. 陶逃桃討套導 | l | 89. 勞撈牢惱腦瑤老瘍 | ts | 89
 棗早 90. 瓜 91. 招昭照 | ts | 89. 操曹槽糟造 90. 抄炒
 91. 朝潮 | s | 89. 嫂 90. 稍 91. 燒少 | ㄋ | 91. 統統擾 | ㄣ |
 89. 高羔膏 90. 攪 | kh | 89. 稿考 90. 敲 | ㄋ | 89. 教熬襖
 90. 咬 | h | 89. 好浩

Corr. 50. /en/: /en/: /en/

1 P | 50. 奔本笨 66a. 崩 1 Ph | 50. 盆 70a. 彭 1 m | 50. 門悶 1 f |
 52. 分墳粉忿 1 t | 50. 敦墩燉頓囤 66a. 登燈等 1 th | 49. 吞
 1 l | 50. 論嫩 59. 倫輪綸 66a. 能 1 ts | 33. 針枕 50. 尊 53a.
 珍真振 66a. 增贈 71a. 爭 72a. 貞整正政証 1 tsh | 50. 村存
 寸 53a. 陳塵伸臣慎 66a. 層 67. 徵稱承懲 70a. 撐 72a.
 程成城誠 1 s | 33. 深孃審甚淫 50. 孫損 53a. 神身申晨
 66a. 僧 67. 升勝 70a. 生省 72a. 聖盛 1 s | 33. 任 53a. 仁人
 惡 1 n | 49. 根跟 70a. 羹更 71a. 耿 1 kh | 66a. 肯 70a. 坑 1 ng |
 49. 恩 70a. 硬 71a. 鸚櫻 1 h | 49. 很恨

Corr. 51. /an/: /an/: /an/

1 P | 36. 搬半 38b. 班板版 1 Ph | 36. 判叛泮 1 m | 36. 瞞饅滿漫
 38b. 蠻 1 f | 23. 凡帆 40b. 藩幡翻煩反飯 1 t | 18. 淡 35. 丹
 單但旦 1 th | 17. 貪探潭 18. 談痰毯 35. 攤灘檀炭彈
 1 l | 17. 男南 18. 藍覽攬 35. 難蘭欄攔爛 1 ts | 18. 暫 19.
 斬站蘸 21. 沾 37a. 棧 39a. 展戰 1 tsh | 17. 蠶 35. 殘 37a.
 產 1 s | 18. 三 20. 衫 21. 閃陝 35. 散傘 37a. 山 39a. 禪
 蟬善膳 1 s | 21. 染 39a. 然 1 n | 18. 甘柑 35. 干竿 1 kh | 17.
 堪坎 35. 看 1 ng | 17. 諳庵暗 21. 淹 35. 安鞍岸案按晏
 38a. 鴈 1 h | 17. 含涵憾 19. 咸鹹喊 20. 銜 35. 寒罕旱漢
 汗

Corr. 52. /ong/: /ong/: /ong/

1 P | 71a. 朋 1 Ph | 66a. 朋 70a. 棚 80. 蓬 1 m | 70a. 猛孟 80b. 夢
 13. 歐某茂貿 1 f | 80b. 風 82. 封葦蜂逢絳 94. 阜 1 t | 80a.
 東董動棟凍洞 81. 冬 1 th | 80a. 通同銅筒童桐桶痛 81.
 疼統 1 tsh | 80a. 聾籠隴攏弄 80b. 隆 81. 農膿 82. 濃 1 ts |
 80a. 總 80b. 中忠終仲眾 81. 宗 82. 種腫重 94. 綳皺
 1 tsh | 80a. 慈聰叢 80b. 蟲冲 1 s | 80a. 撻送 81. 宋 82. 松聳
 1 s | 80b. 戎絨 1 n | 80a. 工公功公攻貢 80b. 弓躬宮 82. 恭供
 共 1 kh | 80a. 孔 82. 恐 1 h | 71b. 宕轟 80a. 紅鴻 1 ng | 80a. 艱

Corr. 53. /aŋg/: /aŋg/: /aŋg/

1 p | 62a. 幫 膀 78. 邦 1 ph | 62a. 滂 傍 6ab. 旁 2a. 忙 芒 1 f |
 63b. 方 妨 芳 房 防 放 1 t | 62a. 當 黨 擋 1 th | 62a. 湯 唐 糖 塘 堂 蕩
 1 l | 62a. 郎 柳 狼 浪 1 ts | 63a. 張 章 長 丈 杖 脹 帳 漲 仗 1 tsh | 63a. 腸
 場 昌 78. 牂 1 s | 63a. 商 傷 裳 常 嘗 償 賞 上 尚 1 sh | 63a. 讓 嚷
 1 ʃ | 62a. 剛 78. 肛 港 虹 1 ʃh | 62a. 康 炕 抗 1 ŋ | 62a. 昂 1 k | 78. 項
 巷

Corr. 54. /aŋg/: /aŋg/: /uaŋg/

1 ts | 62a. 賊 齧 臧 1 tsh | 62a. 倉 蒼 藏 1 s | 62a. 桑 葬 喪

Corr. 55. /er/: /i/: /er/

5. 而 耳 7a. 兒

Corr. 56. /ěr/: /i/: /ěr/

4a. 二

Corr. 57. /ia/: /ia/: /ia/

1 ʃ | 11a. 戒 界 芥 12a. 解

Corr. 58. /ia/: /ian/: /ian/

1 ʃuo | 31a. 筵 筵

Corr. 59. /iou/: /iou/: /iou/

1 t | 14. 丟 1 l | 14. 流 劉 留 榴 1 ʃ | 14. 鳩 揪 九 酒 久 舅 舊 救 究

就 | kh | 94. 秋求球丘 | 29 | 94. 牛 | h | 94. 休羞脩修
因袖 | 200 | 94. 憂優油游由郵有友又右 94b. 幽

Corr. 60. /iau/ : /iau/ : /iau/

| P | 91. 表裱 | Ph | 91. 標瓢 92. 漂 | m | 91. 苗描廟妙 | t | 92.
雕吊釣 | kh | 92. 調條跳挑 | l | 92. 料了瞭 | ʎ | 92. 嚼 90.
交郊教 91. 驕嬌焦椒焦醺 | kh | 90. 巧 91. 橋蹻 | ɲ |
92. 尿 | t | 90. 校酵孝効 91. 宵小笑 | ʃ | 91. 妖天謠搖要
耀

Corr. 61. /ian/ : /ian/ : /ian/

| P | 39a. 鞭辨便 41b. 編編辨 | Ph | 39a. 篇偏騙 41c. 片 | ɲ | 39a.
綿免勉面麵 41a. 眠 | t | 24. 點店墊 41a. 顛典電殿 | kh |
24. 添甜 41a. 天田 | l | 21. 簾 39. 聯連鏈 39b. 戀 41a. 蓮
煉 | ʎ | 19. 減 20. 監 21. 儉漸尖 37a. 間揀 39c. 姦 39a.
煎剪箭件 41a. 肩堅見 | kh | 22. 欠 39c. 遣遣淺 41a. 牽千
前錢 | ɲ | 21. 閻粘驗 22. 嚴 24. 拈念 41a. 研年
| h | 19. 陷 21. 險 37a. 閑限 39a. 仙綫羨 40a. 獻 41a. 先賢
顯縣 | 200 | 21. 鹽炎厭 37a. 眼 39a. 顏 39a. 演馬薦 40a. 言
41a. 烟宴燕

Corr. 62. /ian/ : /ing/ : /in/

| l | 53a. 憐

Corr. 63. /in/: /ing/: /in/

|P| 53a. 賓 67. 冰 70a. 兵 72a. 并 |Ph| 33. 品 53. 貧 67. 憑
 70a. 評平 73a. 瓶屏 |h| 53a. 民閔 70a. 明鳴 72a. 名 73a. 冥
 |t| 73c. 丁釘頂定 |th| 73a. 聽廳廷庭序停 |l| 33. 臨林淋霖
 淋賃 53a. 鄰 67. 陵 73a. 寧鈴零靈 |n| 33. 今金禁 51.
 斤箭近 53a. 巾僅緊津 70c. 京驚景境敬鏡 72a. 晶頸精
 井靜淨勁 73a. 經 |nh| 33. 禽琴侵浸 53a. 親秦 70c. 慶
 72a. 輕清情請 73a. 青 |ng|: |l|: |l| 53a. 杏 67a. 凝 |h| 33. 心
 53a. 辛新薪 67. 興 70a. 行擇 71a. 幸 72a. 姓性 73a. 形刑
 星惺腥 |xuo| 33. 音陰淫飲 51. 隱 53a. 銀因姻引 67. 應
 颯 70c. 英影 71a. 驚 72b. 營

Corr. 64. /iong/: /iong/: /iong/

|nh| 80b. 窮 |h| 70a. 兄 80b. 熊雄 82. 胸先 |xuo| 82. 雍擁湧勇
 用

Corr. 65. /iang/: /iang/: /iang/

|l| 63a. 良涼糧梁兩輛諒亮量 |n| 63a. 僵疆將醬匠糶 78.
 江講絳 |nh| 63a. 強槍牆搶像 78. 腔痊 |ng|: |l|: |l| 63a. 娘
 |h| 63a. 香鄉響向相箱想 |xuo| 63a. 秧央羊楊揚洋陽養瘡
 樣

Corr. 66. /uei/: /uei/: /uei/

|t| 9. 堆對隊 10b. 兌 |th| 9. 推腿 |l| 4b. 累類淚 6b. 棠
 9. 雷內 |ts| 4b. 追維醉 9. 罪 10b. 最 |tsh| 4b. 翠 7b. 吹
 9. 催碎 |s| 4b. 水 7b. 隨髓睡瑞 4b. 稅歲 |z| 14b. 銳
 |n| 4b. 規櫃 6b. 歸鬼貴 9. 瑰 16b. 閨桂 |nh| 4b. 葵愧
 7b. 虧 9. 傀蜃魁 |h| 6b. 揮 7b. 毀 9. 灰回匯悔繪
 10b. 會 16b. 惠 |xuo| 4b. 惟維惟位 6b. 威違圍尾畏謂胃微味
 未 7b. 危委為偽 14b. 衛

Corr. 67. /uai/: /uai/: /uai/

/tsh/7b.搗 /s/4b.表 /k/11b.乖怪 /kh/10b.割 11b.塊 13b.快
/h/懷壞 /ʒuo/10b.外

Corr. 68. /uen/: /uen/: /uen/

/ts/54.準 /tsh/54.春 /s/54.純 /ʒ/54.潤 /k/50.棍 /kh/50.
昆坤綱困 /k/50.惜婚魂渾 70b.橫 /ʒuo/52.文紋蚊聞問

Corr. 69. /uan/: /uan/: /uan/

/t/36.端斷短緼段 /th/36.團 11/36.暖亂 /ts/39b.專轉
/tsh/39b.川穿劍船 /s/36.暖算蒜 /ʒ/39b.軟 /k/36.官棺
冠管貫灌館觀 38b.關慣 /kh/36.寬欸 /h/36.歡換
38b.還 /ʒuo/36.完丸玩 38b.彎灣頑 39b.院 40b.挽晚萬

Corr. 70. /uong/: /uong/: /uong/

/ʒuo/80a.翁

Corr. 71. /uang/: /uang/: /uang/

/ts/62a.莊裝壯壯 /tsh/62a.創牀 /s/62a.霜爽 78.雙 /k/62a.
光廣 /kh/63b.筐狂况 /h/62b.荒荒皇黃慌 /ʒuo/63b.王往亡
忘望

Corr. 72. /iun/: /iun/: /iun/

/k/52.君軍 54.均 /kh/52.裙羣 72b.傾 /h/52b.勳薰 /ʒuo/52.
雲耘韻運暈 72a.永

Corr. 73. /iuan/: /iuan/: /iuan/

/k/39b.捲褰絹眷卷倦 /kh/39b.圈拳權全泉 40b.勸 /k/39a.
鮮 39b.宣旋 40a.掀 41a.絃 41b.玄懸 /ʒuo/39b.淵緣員圓
40b.元原寬園遠願怨

THE EVOLUTION OF THE ANCIENT CHINESE INITIALS

Anc. Ch. p^* , p'^* , b'^* and m^* .

As in other Mandarin dialects dentilabialization has taken place before Anc. Ch. $jwɛi^*$, $iwvi^*$, $iwvm^*$, $iwvp^*$, iwm^* , iwt^* , $iuan^*$, $iuet^*$, $iwang^*$, $iwong^*$, $iung^*$, iuk^* , iu^* and ieu^* . Anc. Ch. m^* has eventually been lost in the dentilabialization process. Before finals other than those listed above the bilabial articulation has been preserved (cf. table on p. 171):

$p^* = /p/$ and $/f/$.

Irregular aspiration is found in 1. $pək^*$ /phè:/phǎ:/phǎ/ and 2. puk^* /phù:/phǔ:/phǔ/.

$p'^* = /ph/$ and $/f/$.

$b'^* = /ph/, /p/$ and $/f/$.

/ph/ is found in syllables with Anc. Ch. p'ing sheng and modern tone 2; /p/ is found elsewhere. Irregular aspiration is found in 3. $b'uəi^*$ /phěi/, 4. $b'wat^*$ /phà:/phǎ:/phǎ/ and 5. $b'äk^*$ /phiè:/phĩ:/phĩ/ (Tsi yün has $p'äk^*$). Irregular lack of aspiration is found in 6. $b'eng^*$ /pōng/ (Tsi yün has $pəng^*$), 7. $b'au^*$ /pǎu/ (cf. Glossary, item 56.), 8. $b'uan^*$ /pān/ and 9. $b'wäng^*$ /pāng/.

$m^* = /m/$ and /zero/

Anc. Ch. t^* , t'^* , d'^* , n^* (incl. n'^*) and l^* .

$t^* = /t/$.

Exceptions: 10. $təu^*$ /thôu/ and 11. $tiək^*$ /li/, cf. List, item 42.

$t'^* = /th/$.

$d'^* = /th/$ and $/t/$.

/th/ is found in syllables with Anc. Ch. p'ing sheng and modern tone 2.; /t/ is found elsewhere. Irregular aspiration is found in 12. $d'au^*$ /thǎu/ and 13. $d'ək^*$ /thè:/thǎ:/thǎ/.

n^* and n'^* = Ch /ng/ [ŋ] and /l/, L and O /l/.

Ch /ng/ is found before medial and syllabic /i/ and /iu/; elsewhere the modern dialects have /l/. Exceptions: 14. $niam^*$ /lĩn:/lĩng:/lĩn/, 15. $nieng^*$ /lĩn:/lĩng:/lĩn/ and 16. $niang^*$ /zǎng/. Cf also Glossary, items 18. and 49.

$l^* = /l/$.

Exceptions: 17. $liěn^*$ /ngĩn:/lĩng:/lĩn/. Cf also List, item 3.

Anc. Ch. ts^* , ts'^* , dz'^* , s^* and z^* .

The dental affricates and fricatives have been palatalized before modern medial and syllabic /i/ and /iu/; elsewhere the dental articulation has been preserved.

$ts^* = /k/[tç]$ and $/ts/$.

Irregular aspiration is found in 18. *tsiam*-* /khĩn:/khĩng:/khĩn/, cf Glossary, item 21., and 19. *tsiak** /khiò:/khiũ:/khið/. Cf also Glossary, item 13.

*ts** = /kh/[tç'] and /tsh/.

Irregular lack of aspiration is found in 20. *ts'uat** /tsò:/tsũ:/tsö/, cf List, item 22., 21. *ts'iu*-* /kiũ:/kiũ:/kiũ/, 22. *ts'äp** /kiè:/kĩ:/kiẽ/. For the irregular O form /tshê/, deriving from *ts'ia**, cf List, item 2.

*dz** = /kh/ [tç'], /k/ [tç], /tsh/ and /ts/.

The aspirated initials are found in syllables with Anc. Ch. p'ing sheng and modern tone 2; the unaspirated initials are found elsewhere. Irregular aspiration is found in 23. *dz'au*-* /tshǎu/, cf List, item 51., 24. *dz'uk** /khiò:/tshũ:/tshũ/, 25. *dz'i** /tshĩ/. Irregular lack of aspiration is found in 26. *dz'iei** /kĩ/.

*s** = /h/ [ç] and /s/.

Exceptions: 27. *suäi*-* /tshuěi/, 28. *siç*-* /tshĩ:/tshĩ:/tshĩ/. Note also 29. *suk** /hiò:/sũ:/sũ/, 30. and 31. *siuk** /hiò:/hiũ:/sũ/ (30. and 31. L also /sũ/).

*z** = /h/[ç] and /s/.

Exceptions: 32. and 33. *ziang** O /khiàng/, Ch and L regularly /hiàng/, 34. *ziang** /khiǎng/, cf List, item 32. Note also 35. and 36. *ziwok** /hiò:/sũ:/sũ/.

Anc. Ch. *ĩ**, *ĩ'**, *đ**, *ts**, *ts'**, *dz**, *ś**, *ź** and *ń*z*.

*ĩ** = /ts/.

Exception: 37. *ĩäk** /tshò:/tshũ:/tshö/.

*ĩ'** = /tsh/.

*đ** = /tsh/ and /ts/.

/tsh/ is found in syllables with Anc. Ch. p'ing sheng and modern tone 2; /ts/ is found elsewhere. Irregular aspiration is found in 38.—40. *d'ok** /tshè:/tshǎ:/tshǎ/ and 41. *đ'iet** /tshĩ:/tshĩ:/tshĩ/.

*ts** = /ts/.

Exception: 42. *tsiät** /sè:/sǎ:/sǎ/, cf Glossary, item 26. Cf also List, item 4.

*ts'** = /tsh/.

Exception: 43. *ts'iak** /tsò:/tsũ:/tsö/.

*dz** = /s/.

Exceptions: 44. *dz'iwän** /tshuàn/ and 45. *dz'iwok** /tù:/tũ:/tũ/.

*ś** = /s/.

Exceptions: 46. *śiç*-* /tsĩ:/tsĩ:/tsĩ/ and 47. *śjěn** /tshěn/.

*ź** = /tsh/ and /s/.

/tsh/ is found in 48. *éiĕn**, 49. *éiəng**, 50.—52. *éiəng** /tshèn/ and 53. *éiĕn** /tshĕn/; /s/ is found elsewhere.

*ńí**

*ńí** and *ńíĕ** have become /er:/l:/er/; in all other instances the modern dialects have /z/.

Anc. Ch. *tɕ**, *tɕ'**, *dɕ'** and *ɕ**.

*tɕ** = /ts/.

Irregular aspiration is found in 54. *tɕiək** /tshè:/tshă:/tshă/.

*tɕ'** = /tsh/.

*dɕ'** = /tsh/, /ts/ and /s/.

/tsh/ is found in syllables with Anc. Ch. p'ing sheng and modern tone 2; /s/ is found in 55. and 56. *dz'i-** /sĭ:/sĭ:/sĭ/; /ts/ is found elsewhere.

*ɕ** = /s/.

Exception: 57. *ɕăn** /tshan/.

Anc. Ch. *k**, *k'**, *g'**, *ng**, *χ**, *γ**, *·**, *zero** and *ŋ**.

The Anc. Ch. velar initials have in the modern dialects been split in a palatal series, occurring before medial and syllabic /i/ and /iu/, and a velar series occurring elsewhere.

Palatalization has occurred before Anc. Ch. *a**, *ăi**, *ai**, *ăm**, *am**, *ăn**, *an**, *vng**, *eng**, *ang**, *ăk** and *au**. Velar articulation has been preserved in the following instances: 58. *kai** /kăi/, 59. *kəng** /kĕn/, 60. *kəng-** /kĕn/, 61. *kəng:* /kĕn/, 62. *kāng** /kāng/, 63. and 64. *kāng-** /kāng/, cf Glossary, item 40., 65. *kau:* /kâu/, 66. *k'ăi** /khăi/, 67. *k'ai:* /khăi/, 68. *k'vng** /khĕn/, 69. *k'au** /khâu/, 70. *ngan-** /ngăn/, 71. *ngvng-** /ngĕn/, 72. *ngáu:* /ngâu/, 73. *ǵăm:* /hân/, 74. *γai:* /hâi/ (reading pronunciation: /hiăi/), 75. *γai** /hâi/, 76. *γăm** /hàn/, 77. *γăm** /hàn/, 78. *γam** /hàn/, 79. *γvng:* /hĕn/, cf List, item 38., 80. *γăng:* /hăng/ and 81. *γăng-** /hăng/.

*k** = /k/[tɕ], [k].

Irregular aspiration is found in 82. *kăi-** /khăi/, 83. *kuăi-** /khuăi/, cf List, item 7., 84. *kuăi-** /khuăi/, 85. *kjwi-** /khuĕi/, 86. *kăp** /khò:/khô:/khô/, 87. *kĭvp** /khiĕ:/khĭ:/khiĕ/, 88. *kuən** /khuĕn/ and 89. *kuo** /khū/, cf Glossary, item 46. For the irregular O form 90. /tsăi/ see List, item 8.

*k'** = /kh/ [tɕ'], [k'].

Exception: 91. *k'ĭəp** /hiĕ:/hĭ:/hĭ/.

*g'** = /kh/ [tɕ'], [k'] and /k/ [tɕ], [k].

1. 迫	2. 卜	3. 佩	4. 拔	5. 闕	6. 綱	7. 龜	8. 搬
9. 膀	10. 抖	11. 的	12. 導	13. 特	14. 賃	15. 寧	16. 釀
17. 各	18. 浸	19. 淮	20. 振	21. 娶	22. 妻	23. 造	24. 族
25. 養	26. 臍	27. 碎	28. 賜	29. 連	30. 宿	31. 肅	32. 祥
33. 詳	34. 像	35. 俗	36. 續	37. 濁	38. 宅	39. 澤	40. 擇
41. 秩	42. 折	43. 綽	44. 船	45. 贖	46. 翅	47. 伸	48. 臣
49. 承	50. 成	51. 城	52. 誠	53. 慎	54. 側	55. 士	56. 事
57. 產	58. 街	59. 羹	60. 更	61. 耿	62. 肛	63. 港	64. 缸
65. 攪	66. 揩	67. 楷	68. 坑	69. 敲	70. 鴈	71. 硬	72. 咬
73. 喊	74. 蟹	75. 鞋	76. 咸	77. 鹹	78. 銜	79. 杏	80. 項
81. 巷	82. 概	83. 會	84. 創	85. 愧	86. 咭	87. 劫	88. 昆
89. 箍	90. 皆	91. 泣	92. 簪	93. 疑	94. 宜	95. 儀	96. 研
97. 嚴	98. 驗	99. 業	100. 捻	101. 逆	102. 凝	103. 牛	104. 我
105. 義	106. 俄	107. 蛾	108. 鵝	109. 阿	110. 鞞	111. 翁	112. 熊
113. 雄	114. 巢	115. 羣	116. 閭	117. 孕	118. 銳		

The aspirated forms are found in syllables with Anc. Ch. p'ing sheng and modern tone 2; the unaspirated forms are found elsewhere. Exception: 92. *g'iwän** /kiuän/.

*ng** = /ng:/ /l:/ /l/, /ng/ and /zero/.

/ng:/ /l:/ /l/ occur in 93. *ngji**, 94. *ngjiɛ** and 95. *ngjiɛ** /ngl:/ /li:/ /li/, 96. *ngien* /ngiän:/ /liän:/ /liän/, 97. *ngipm** /ngiän:/ /liän:/ /liän/, 98. *ngiam** /ngiän:/ /liän:/ /liän/, 99. *ngip**, 100. *ngiep** and 101. *ngipk** /ngiè:/ /li:/ /liè/, 102. *ngiang** /ngin:/ /ling:/ /lin/ and 103. *ngiəu** /ngiəu:/ /liəu:/ /liəu/.

In all other cases the modern dialects have /zero/ before /i/ and /iu/. Before velar medials the initial has dropped without trace.

104. *ngâ:** has become /ngô/, 105.—108. *ngä** have become /ò/. Elsewhere the velar articulation has been preserved.

*χ** = /h/ [ç], [x] and /f/.

/f/ is found in the syllable /fu/ derived from Anc. Ch. *χuo**.

*γ** = /h/ [ç], [x] and /f/.

The evolution of this initial has been parallel to that of *χ** above.

** = /ng/ and /zero/.*

/zero/ is found before medial and syllabic /i/, /iu/ and /u/. 109. *·â** has become /ō/; 110. *·ung** has become /ōng/ and 111. *·ung** has become /uōng/. In all other cases the modern dialects have /ng/ in analogy with *ng** above.

*j** = /zero/, followed by /i/, /iu/ or /u/.

Exceptions: 112. *·jūng** and 113. *·jūng** /hiòng/, 114. *·wəi-** /luěi/ and 115. *·jūən-** /huēn/, cf List, item 27.

*zero** = /zero/, followed by /i/, /iu/ or /u/.

Exceptions: 116. *·iām** /ngiàn/:/liàn/:/liàn/, 117. *·iəng-** /zuēn/ and 118. *·iwāi-** /zuěi/.

THE EVOLUTION OF THE ANCIENT CHINESE TONES

Ancient Chinese possessed four tone classes, termed *p'ing sheng*, *shang sheng*, *k'ü sheng* and *ju sheng* respectively. We know from the reconstruction of the tonal system of Ancient Chinese that certain distinctions were present within each tone class and that these distinctions had some relation to the voiced or unvoiced quality of the initial. The exact nature of these distinctions is not known. A study of certain dialects in South China has led to the conclusion that the distinctions within each tone class were distinctions in pitch and that each of the Ancient Chinese tones comprised a high-pitched variant occurring in syllables with unvoiced initials and a low-pitched variant occurring in syllables with voiced initials.

The distribution of the Sich'uanese word material into the present tone classes, tone 1, tone 2, tone 3, tone 4, and, as far as L and O are concerned, tone 5, has been conditioned by various factors. In some cases the change of tone class bears a certain relation to the initials: Anc. Ch. *p'ing sheng* has in Sich'uanese, as in other Mandarin dialects, been distributed over two tone classes, tone 1 and tone 2, depending on the unvoiced or voiced quality of the initial.

In other cases we might be justified in assuming, that a change of tone class has been influenced by a strong similarity between the tonal features of two tone classes, a similarity which might be responsible for a wholesale incorporation of the one class into the other. This seems to be the case in Ch, where Anc. Ch. *ju sheng* has been assimilated with tone 2.

Finally, a tonal change may have been influenced by the quality of the final, as in the highly interesting case of Anc. Ch. *k'ü sheng*, which in syllables with certain finals has become 0 tone 5. This phenomenon, which does not seem to have a parallel in any other Chinese dialect, will be discussed in detail below.

In order to facilitate the description we divide the Anc. Ch. initials into three classes: a), b) and c).

Class a) comprises all unvoiced initials: the velars *k**, *k**, *χ** and the laryngal

·*, the palatals *î**, *î'**, *tš**, *tš'**, *š**, the supradentals *tɕ**, *tɕ'**, *ɕ**, the dentals *t**, *t'**, *ts**, *ts'** *s** and the bilabials *p** and *p'*.

Class b) comprises the following initials: *ng**, *ńž**, *n** (including *ń**), *l**, *m**, *j** and *zero**.

Class c) comprises the following initials: the voiced stops *b'**, *d'** and *g'**, the voiced affricates *dz'**, *dž'** and *dʒ'** and the voiced fricatives *ɣ**, *ʒ** and *z**.

A comparison of the tone classes in Anc. Ch. and in the modern dialects is given in the following table:

Anc. Ch. tone class	initial class	modern finals	modern tone class		
			Ch	L	O
p'ing sheng	a	all	1	1	1
	b c		2	2	2
shang sheng	a b	all	3	3	3
	c	/i iu u I o ie er/	4	4	5
		other finals	4	4	4
k'ü sheng	a b c	/i iu u I o ie er/	4	4	5
		other finals	4	4	4
ju sheng	a b c	all	2	5	5

The change from Anc. Ch. k'ü sheng — and shang sheng in syllables containing initials of class c) — has been extensively illustrated in the following correspondence series:

- 2. /ɿ/:/ɿ/:/ɿ/
- 5. /iũ/:/iũ/:/iũ/
- 8. /ũ/:/ũ/:/ũ/
- 11. /ĩ/:/ĩ/:/ĩ/
- 20. /ǝ/:/ǝ/:/ǝ/
- 21. /ǝ/:/ǝ/:/uǎ/
- 26. /iě/:/i/:/iě/
- 56. /ěr/:/l/:/ěr/

We find only four simple finals in the Omei dialect, in which this change has not taken place, namely /a ia ua/ and /e/. The three finals /a ia ua/ are the only 0 finals that possess variants conditioned by tone 5: [æ iæ uæ]. The fact that the transition has not occurred in these finals suggests that a phonetic identity of finals has been an indispensable condition for the transition. In other words, the transition has been prevented in those finals where a change of tone class would inevitably have involved a change of vowel quality. The tendency to preserve the vowel quality of the finals /a ia ua/ was evidently stronger than the tendency of the assimilation of k'ü sheng into 0 tone 5.

Only one case has been found where the change of tone class has involved a change of vowel quality: correspondence series 21. /khǝ/:/khǝ/:/khuǎ/, deriving from Anc. Ch. *k'uá-**.

1. 侵	2. 隣	3. 期	4. 珠	5. 摹	6. 摩	7. 搬	8. 拈
9. 研	10. 炎	11. 簪	12. 繩	13. 棚	14. 松	15. 飽	16. 勝
17. 價	18. 懲	19. 任	20. 金口	21. 算	22. 蟻	23. 剖	24. 擠
25. 腐	26. 斧	27. 夥	28. 贊	29. 置	30. 植	31. 值	32. 鼻
33. 婿	34. 玩	35. 忘	36. 假	37. 塊	38. 僅	39. 振	40. 很
41. 儉	42. 漲	43. 統	44. 拉	45. 隻	46. 匣	47. 瘍	48. 壓
49. 腋	50. 飾	51. 式	52. 華				

As for the highly interesting form 0 /ěr/ (cf correspondence series 56. /ěr/: /l/:/ěr/ 'two') we must conclude, that the transition from Anc. Ch. k'ü sheng into 0 tone 5 had occurred already before the process of retroflexion — *níi*-* > > *xi* > *xi* > *er* — set to work: *níi*-* must have become *níi**, just as *xi*- became *xi** and later on this *níi** has quite regularly been subjected to retroflexion.

It would be possible to treat Anc. Ch. ju sheng as a conditioned variant of Anc. Ch. k'ü sheng, which tone could then be regarded as containing two conditioned variants: one occurring with finals ending in -p*, -t* and -k* and another variant occurring with all other finals. The possibility of a similar interpretation of 0 tone 4 and tone 5 has been noted above.

All recorded instances of irregular tones are listed below.

We expect tone 1 in 1. *ts'iem** /khĩn:/ /khĩng:/ /khĩn/. For other deviations from an expected tone 1 see List, items 15., 31. and 33. and Glossary, items 41., 47., 59. and 60.

We expect tone 2 in 2. *dz'iei* /kĩ/ (we expect /khĩ/), 3. *g'ji** /khĩ/, 4. *z'iu** /sũ/, 5. *muá** /mō/, 6. *muo** /mō/ 7. *b'uán** /pān/, 8. *niem** and 9. *ngien** /ngiān:/ /liān:/ /liān/, 10. *j'iam** /iān/, 11. *g'iwān** /kiuān/ (we expect /khiuān/), 12. *i'eng** /in:/ /ing:/ /in/, 13. *b'eng** /pōng/ (Tsi yün has *pəng**), 14. *z'iwong** /sōng/, 15. *b'au** /phâu/, 16. *b'wáng** /pāng/ (we expect /phàng/), 17. *z'iang** /sāng/ (Tsi yün also *s'iang**), 18. *d'iang** /tshēn/ and 19. *n'iem** /zēn/.

For other deviations from an expected tone 2 see List, items 16., 26., 44. and 50. and Glossary, items 52., 56. and 57.

We expect tone 3 in 20. *k'zu** /khǒu/, 21. *suán** /suǎn/, 22. *ngjié** /ĩ:/ /ĩ:/ /ĩ/ and 23. *p'zu** /phǒ:/ /phǒ:/ /phǒ/. For other deviations see List, item 9 and Glossary, item 49.

We expect Ch and L tone 4, 0 tone 5 in 24. *tsiei** /kĩ/, 25. and 26. *b'iu** /fũ/ and 27. *yuá** /hō/.

In the following syllables the Ch and L forms point to Anc. Ch. ju sheng: 28. *tsi**, 29. *i**, 30. and 31. *d'i**, which syllables all have become /tsĩ:/ /tsĩ:/ /tsĩ/, 32. *b'ji** /pĩ:/ /pĩ:/ /pĩ/ and 33. *siei** /hĩ:/ /hĩ:/ /hĩ/.

We expect tone 4 in 34. *nguán** /uàn/, 35. *m'iwang** /uàng/, 36. *ka** /kiā/ 'vacation', 37. *k'wái** /khuái/, 38. *g'ien** /kín:/ /kíng:/ /kín/, 39. *ts'ien** /tsēn/.

40. *ɣən*.* /hên/, 41. *g'ïäm*.* /kiän/, 42. *îiang*.* /tsâng/ and 43. *t'uong*.* /thông/ (Yün huei has *t'ung*.*).

For other deviations from an expected tone 4 see List, items 11., and 53.

We expect Ch tone 2, L and O tone 5 in 44. *láp** /lā/, 45. *tšïäk** /tsī/, 46. *ɣap** /hiä/, 47. *piet** /piä/, 48. *ap** /iä/, 49. *ïäk** /ɿ:/ɿ:/ɿ/, 50. and 51. *šïək** /sɿ:/sɿ:/ and 52. *māk** /mǒ:/mǒ:/mǒ/.

For other deviations see List, items 20., 21., 23., 24., 25., 29., 36., 41., and 58. and Glossary, items 31., 32., 33., 43., 44. and 45.

THE EVOLUTION OF THE ANCIENT CHINESE FINALS

With the exception of Anc. Ch. *ju sheng* finals there is on the whole a fairly strict agreement between Sich'uanese and Northern Mandarin with regard to the development of the Anc. Ch. finals. The result of this development is shown in the following list of Anc. Ch. finals and their modern projections in Ch, L and O; the actual number of instances within each correspondence series is given within parenthesis.

It is felt that this list and a few supplementary remarks on certain changes with regard to syllabic structure will be sufficient to render a fairly full account of the historic development.

One feature which Sich'uanese shares with other Mandarin dialects is partial palatalization identified as the appearance of a palatal medial before Anc. Ch. finals containing one of the vowels *ä**, *a** and *ɛ** in syllables with velar initials. This development appears to have been somewhat retarded in Sich'uanese and we consequently find a vacillation of forms with and without palatal medial. In the case of the Anc. Ch. final *a** this partial palatalization has occurred in all recorded instances. There are, however, a fairly large number of unwritten *t'u hua* expressions without palatal medial, which probably derive from this final. Examples are /'kâ-kâ/ 'fat meat' (in children's language), /khâ/ 'to smart, of eyes', /'ngâ-khâ/ 'to treat people in an arrogant manner', /'ngâ-tau/ 'to pinch', /hâ/ 'to tickle' and /hâ/ 'reckless'.

In syllables with the Anc. Ch. finals *ɤng** and *eng** we find a vacillation between completely palatalized forms: /in:/ing:/in/ and non-palatalized forms: /en/. The complete palatalization appears to be a fairly recent development (cf Glossary, item 35.).

The disappearance of Anc. Ch. palatal medials has been effected either through the depalatalizing influence of Anc. Ch. palatal (>supradental > dental) initials or through complete palatalization, as in the transition *ïäm** > /in:/ing:/in/.

As for the appearance of a modern velar medial Sich'uanese is in agreement with Northern Mandarin: *şäng** > *şang** /suang/. In O the same development has occurred also in the Anc. Ch. final *äng** after dental affricates and fricatives: *tsäng** > O /tsuang/.

In some cases the loss of Anc. Ch. velar medials has been the result of a more or less strong velarization of the vowel: *uā** >uo> /o/ and *uo** >/u/. Before the velarized L vowel /a/ the velar medial has been retained only after modern /zero/ initial: *ngwa** >L /ua/, but *kwa** >L /ka/. Before the centralized vowel /ä/ the velar medial has been retained: *ɣwat** >L /huä/.

In Anc. Ch. *uən** the medial has been kept only after velar initials. The loss of the velar medial after initials other than velars had probably taken place already before the mid of the 15th century (cf Glossary, item 36.).

The Anc. Ch. medial clusters *-iɯ** and *-iɰ** have been reduced or entirely lost as a result of the depalatalization process after Anc. Ch. palatal (>supradental>dental) initials, as in *tšiuən** > /tsuen/ and *tšiuo** > /tsu/, or through the dentilabialization of Anc. Ch. bilabial initials, as in *piwən** > /fan/, or, finally, through partial or complete palatalization, as in *kiwän** > /kiuan/ and *kiwo** > /kiu/.

As for the final consonants the distinction between *-m** and *-n** has disappeared without trace. Anc. Ch. *-ng** has been retained after the modern vowels /a/ and /o/. In syllables with the Anc. Ch. finals *əng**, *ɤng** and *eng** after bilabial initials the modern dialects vacillate between /en/ (in analogy with *ən** > /en/) and /ong/ (in analogy with *ung** > /ong/). The Anc. Ch. distinctions *ən*:əng** and *iən*:iəng** have been neutralized in Ch, L, O /en/ and /in:/ /ing:/ /in/ respectively.

The final stops have been lost in all three dialects. In Ch these Anc. Ch. ju sheng finals all have tone 2. The corresponding L and O finals are restricted to tone 5.

After Anc. Ch. velar initials the finals *āp**, *āp**, *āt** and *āk** have become /ò:/ /õ:/ /õ/. The finals *ək**, *vk** and *ek** have become /è:/ /õ:/ /ä/. The multiple Anc. Ch. distinctions *āp**, *āp**, *āt**, *āk**: *ək**, *vk**, *ek** have thus been lost in L, whereas Ch and O have, to a certain degree, preserved the distinction: *āp**: *ək** emerges in Ch as /ò:/ /è/ and in O as /õ:/ /ä/.

After Anc. Ch. initials other than velars *āp**, *āp**, *ap**, *āp**, *āt**, *āt** and *at** have coalesced in Ch /ä/, L and O /ä/, whereas *ək**, *vk** and *ek** have become Ch /è/, L and O /ä/. The multiple Anc. Ch. distinctions between *āp**, *āp** etc. and *ək**, *vk** and *ek** have been lost in L and O, but are still mirrored in the Ch opposition /ä:/ /è/.

The Anc. Ch. distinction between *āk** and *uk** has been lost without trace in L, but is still preserved in Ch /ò:/ /ù/ and O /õ:/ /ü/.

When preceded by Anc. Ch. initials other than palatals the finals *iāp**, *iāt**, *iɤp**, *iɤt**, *iep**, *iet**, *iäk**, *iɤk**, *iek**, *iəp**, *iət**, *iēt** and *iək** have become Ch /i/ and /iè/, O /i/ and /iè/ and L /i/. The Ch and O finals denote two different degrees of palatalization. The multiple Anc. Ch. distinctions between *iā** and *iā** on the one hand and *iāp**, *iāt** etc. on the other, which oppositions were based on different syllabic structure and difference in vowel quality emerge in L as a tonal distinction: /i:/ /i/.

Similarly we notice that L /iü/, deriving from Anc. Ch. *iwät**, *iwɤt**, *iwet**,

*ɿuət**, *ɿuēt**, *ɿwək** and *ɿwok**, corresponds to Ch /iù/, /iuè/, /iè/ and /iò/ and O /iũ/, /iuě/, /iě/ and /iö/, which finals denote different degrees of palatalization and velarization. In L the Anc. Ch. distinction between ɿu(w)-V on the one hand and ɿu(w)-V-p(-t-k) on the other has been replaced by a tonal distinction: *ɿwo** and *ɿu** have become L /iu/ and *ɿwāt**, *ɿwət**, *ɿwet**, *ɿuət**, *ɿuēt**, *ɿwək** and *ɿwok** have become L /iũ/.

1 a. <i>ā*</i>		corr. 19. (21)	/ko/
	k'ü	corr. 20. (4)	/kō:/ /kō:/ /kō/
		corr. 17. (2)	/tha/
1 b. <i>īā*</i>		corr. 35. (1)	/khiue:/ /khi:/ /khiu/
2 a. <i>uā*</i>		corr. 19. (24)	/to/
	k'ü	corr. 20. (11)	/pō:/ /pō:/ /pō/
	k'ü	corr. 21. (1)	/khō:/ /khō:/ /khuā/
2 b. <i>ɿuā*</i>		corr. 36. (2)	/khiue:/ /khiu:/ /khiue/
3 a. <i>a*</i>	velars	corr. 29. (21)	/kia/
	others	corr. 17. (25)	/pha/
		corr. 43. (1)	/sua:/ /sa:/ /sa/
3 b. <i>wa*</i>	/zero/	corr. 42. (1)	/ua/
	others	corr. 43. (6)	/kua:/ /ka:/ /kua/
		corr. 44. (1)	/khua:/ /kha:/ /kha/
3 c. <i>ia</i>	palatals	corr. 13. (13)	/tse:/ /tsei:/ /tse/
	others	corr. 25. (8)	/kie:/ /ki:/ /kie/
	k'ü	corr. 26. (3)	/iě:/ /i:/ /iě/
4 a. <i>ji*</i>	<i>ńś*</i>	corr. 56. (1)	/ěr:/ /i:/ /ěr/
	palatals	corr. 10. (12)	/tsī/
	k'ü	corr. 11. (5)	/tsī:/ /tsī:/ /tsī/
		corr. 12. (4)	/tsī:/ /tsī:/ /tsī/
	others	corr. 1. (7)	/pi/
	k'ü	corr. 2. (1)	/pī:/ /pī:/ /pī/
4 b. <i>jwi*</i>	bilabials	corr. 46. (2)	/pei/
		corr. 1. (2)	/phi/
	k'ü	corr. 2. (2)	/pī:/ /pī:/ /pī/
	others	corr. 66. (16)	/luei/
		corr. 67. (1)	/suai/
		corr. 4. (1)	/hui/
		corr. 5. (1)	/hiũ:/ /hiũ:/ /hiũ/
5. <i>ji*</i>	<i>ńś</i>	corr. 55. (2)	/er:/ /l:/ /er/
	palatals	corr. 10. (19)	/tsī/
	k'ü	corr. 11. (10)	/tsī:/ /tsī:/ /tsī/
	others	corr. 1. (24)	/ki/
	k'ü	corr. 2. (5)	/kī:/ /kī:/ /kī/
6 a. <i>jǣ*</i>	velars	corr. 1. (8)	/ki/
	k'ü	corr. 2. (2)	/kī:/ /kī:/ /kī/

6 b. <i>jwɛi</i> *	<i>m</i> *	corr. 66. (1)	/uei/
	bilabial		
	stops	corr. 46. (7)	/pei/
	velars	corr. 66. (14)	/kuei/
		corr. 5. (1)	/iũ:/iũ:/iũ/
7 a. <i>jiɛ</i> *	<i>ɲɛ</i> *	corr. 55. (1)	/er/;/l/;/er/
	palatals	corr. 10. (15)	/tsi/
	k'ü	corr. 11. (6)	/tsɿ/;/tsɿ/;/tsɿ/
	others	corr. 1. (14)	/khi/
	k'ü	corr. 2. (10)	/khɿ/;/khɿ/;/khɿ/
7 b. <i>jwiɛ</i>	<i>m</i> *	corr. 66. (4)	/uei/
	bilabial		
	stops	corr. 46. (1)	/pei/
		corr. 1. (1)	/pi/
	others	corr. 66. (7)	/khuei/
		corr. 67. (1)	/tshuai/
8. <i>ɬi</i> *		corr. 47. (41)	/tai/
9. <i>uɬi</i> *	bilabials	corr. 46. (7)	/phei/
	others	corr. 66. (19)	/kuei/
10 a. <i>ai</i>		corr. 47. (8)	/kai/
		corr. 17. (1)	/ta/
10 b. <i>uɬi</i> *	velars	corr. 67. (2)	/khuai/
		corr. 66. (1)	/huei/
	others	corr. 66. (2)	/tsuei/
11 a. <i>ɬi</i> *	velars	corr. 58. (3)	/kiai/
		corr. 47. (3)	/khai/
	others	corr. 47. (3)	/tsai/
11 b. <i>wɬi</i> *	bilabials	corr. 47. (1)	/pai/
	others	corr. 67. (5)	/kuai/
12 a. <i>ai</i> *	velars	corr. 58. (1)	/kiai/
		corr. 47. (3)	/kai/
	others	corr. 47. (6)	/mai/
12 b. <i>wai</i> *	bilabials	corr. 47. (2)	/phai/
	velars	corr. 43. (1)	/kua/;/ka/;/kua/
13 a. <i>ai</i> *	no examples		
13 b. <i>wai</i> *	bilabials	corr. 47. (1)	/pai/
	velars	corr. 67. (1)	/khuai/
		corr. 43. (1)	/hua/;/ha/;/ha/
14 a. <i>ɿi</i> *	palatals	corr. 11. (6)	/tsɿ/;/tsɿ/;/tsɿ/
	others	corr. 2. (6)	/li/;/li/;/li/
14 b. <i>iwɬi</i> *		corr. 66. (4)	/suei/
		corr. 5. (1)	/hiũ/;/hiũ/;/hiũ/
15 a. <i>iɱi</i> *	no examples		
15 b. <i>iɱwi</i> *		corr. 46. (3)	/pei/

16 a.	<i>iei*</i>		corr. 1. (24)	/ki/
		k'ü	corr. 2. (13)	/kĩ:/kĩ:/kĩ/
			corr. 3. (1)	/hì:/hĩ:/hĩ/
16 b.	<i>iwei*</i>		corr. 66. (3)	/huei/
17.	<i>qm*</i>		corr. 51. (14)	/than/
18.	<i>am*</i>		corr. 51. (11)	/tan/
19.	<i>ām*</i>	velars	corr. 61. (2)	/kian/
			corr. 51. (3)	/han/
		others	corr. 51. (3)	/tsan/
20.	<i>am*</i>	velars	corr. 61. (1)	/kian/
			corr. 51. (1)	/han/
			corr. 47. (1)	/ngai/
		others	corr. 51. (1)	/san/
21.	<i>iam*</i>	palatals	corr. 51. (4)	/tsan/
		others	corr. 61. (11)	/kian/
			corr. 51. (1)	/ngan/
22.	<i>ivm*</i>	velars	corr. 61. (2)	/khian/
23.	<i>iwvm*</i>	bilabials	corr. 51. (2)	/fan/
24.	<i>iem*</i>		corr. 61. (7)	/tian/
25.	<i>ap*</i>	velars	corr. 24. (3)	/hò:/hõ:/hõ/
		others	corr. 18. (5)	/tà:/tǎ:/tǎ/
			corr. 17. (1)	/la/
26.	<i>ap*</i>	velars	corr. 24. (1)	/khò:/khõ:/khõ/
		others	corr. 18. (4)	/thà:/thǎ:/thǎ/
27.	<i>ǎp*</i>	velars	corr. 30. (2)	/kià:/kiǎ:/kiǎ/
		others	corr. 18. (4)	/tsà:/tsǎ:/tsǎ/
28.	<i>ap*</i>	velars	corr. 30. (4)	/kià:/kiǎ:/kiǎ/
			corr. 29. (2)	/hia/
29.	<i>iǎp*</i>	palatals	corr. 14. (2)	/tsè:/tsǎ:/tsǎ/
		others	corr. 28. (5)	/kiè:/kĩ:/kiě/
30.	<i>ivp*</i>		corr. 28. (3)	/khiè:/khĩ:/khiě/
31.	<i>iwvp*</i>	bilabials	corr. 18. (2)	/fà:/fǎ:/fǎ/
32.	<i>iep*</i>		corr. 28. (5)	/tiè:/tĩ:/tiě/
33.	<i>iəm*</i>	palatals	corr. 50. (8)	/tsen/
		others	corr. 63. (19)	/kin:/king:/kin/
34.	<i>iəp*</i>	<i>ńz*</i>	corr. 9. (1)	/zù:/zǔ:/zǔ/
		other		
		palatals	corr. 12. (4)	/tsǐ:/tsĩ:/tsĩ/
		supra-		
		dentals	corr. 14. (14)	/sè:/sǎ:/sǎ/
		others	corr. 3. (7)	/kì:/kĩ:/kĩ/
			corr. 16. (1)	/kē:/kõ:/kĩ/
			corr. 27. (1)	/hiè:/hĩ:/hĩ/
35.	<i>an*</i>		corr. 51. (31)	/tan/

36.	<i>uân*</i>	bilabials	corr. 51. (9)	/pan/
		others	corr. 69. (26)	/tuan/
37 a.	<i>ăn*</i>	velars	corr. 61. (5)	/hian/
		others	corr. 51. (3)	/san/
38 a.	<i>an*</i>	velars	corr. 61. (2)	/ian/
			corr. 51. (1)	/ngan/
38 b.	<i>wan*</i>	bilabials	corr. 51. (4)	/pan/
		others	corr. 69. (6)	/uan/
39 a.	<i>ïän*</i>	palatals	corr. 51. (7)	/tsan/
		others	corr. 69. (6)	/kian/
			corr. 58. (2)	/iai/:/ian/:/ian/
			corr. 73. (1)	/hiuan/
39 b.	<i>iwän*</i>	palatals	corr. 69. (7)	/tsuan/
		others	corr. 73. (17)	/kiuan/
			corr. 61. (1)	/lian/
			corr. 69. (1)	/uan/
40 a.	<i>ïm*</i>		corr. 61. (2)	/ian/
			corr. 73. (1)	/hiuan/
40 b.	<i>ïwm*</i>	<i>m*</i>	corr. 69. (3)	/uan/
		bilabial		
		stops	corr. 51. (6)	/fan/
		others	corr. 73. (9)	/kiuan/
41 a.	<i>ien*</i>		corr. 61. (26)	/tian/
			corr. 73. (1)	/hiuan/
			corr. 62. (1)	/lian/:/ling/:/lin/
41 b.	<i>iwen*</i>	bilabials	corr. 61. (3)	/pian/
		velars	corr. 73. (2)	/hiuan/
42 .	<i>ât*</i>	velars	corr. 24. (1)	/kò/:/kǒ/:/kǒ/
			corr. 22. (1)	/hò/:/hǒ/:/hǒ/
		others	corr. 18. (3)	/là/:/lǎ/:/lǎ/
43.	<i>uât*</i>		corr. 22. (7)	/pò/:/pǒ/:/pǒ/
			corr. 18. (1)	/khuè/:/khuǎ/:/khuǎ/
			corr. 41. (1)	/mà/:/mǎ/:/mǎ/
44 a.	<i>ăt*</i>	velars	corr. 30. (1)	/hià/:/hiǎ/:/hiǎ/
		others	corr. 18. (2)	/sà/:/sǎ/:/sǎ/
44 b.	<i>wăt*</i>		corr. 45. (2)	/suà/:/suǎ/:/suǎ/
45 a.	<i>at*</i>		corr. 18. (2)	/tsà/:/tsǎ/:/tsǎ/
45 b.	<i>wat*</i>	bilabials	corr. 18. (2)	/pà/:/pǎ/:/pǎ/
		others	corr. 45. (1)	/huà/:/huǎ/:/huǎ/
			corr. 42. (1)	/ua/
46 a.	<i>ïăt*</i>	palatals	corr. 14. (7)	/tsè/:/tsǎ/:/tsǎ/
		others	corr. 28. (7)	/miè/:/mǐ/:/mǐ/
			corr. 37. (1)	/hiuè/:/hiǔ/:/hiuǎ/

46 b.	<i>iwāt*</i>	<i>ś</i>	corr. 22. (1)	/sò:/sũ:/sǒ/
		<i>l*</i>	corr. 28. (1)	/liè:/lĩ:/liě/
		others	corr. 37. (4)	/kiuè:/kiũ:/kiuě/
47 a.	<i>iət*</i>		corr. 28. (1)	/hiè:/hĩ:/hie/
47 b.	<i>iwt*</i>	<i>m*</i>	corr. 45. (1)	/uà:/uǎ:/uǎ/
		bilabial		
		stops	corr. 18. (5)	/fà:/fǎ:/fǎ/
		velars	corr. 38. (4)	/iuè:/iũ:/iǒ/
48 a.	<i>iet*</i>		corr. 28. (6)	/miè:/mĩ:/miě/
			corr. 37. (1)	/hiuè:/hiũ:/hiuě/
			corr. 29. (1)	/piǎ/
48 b.	<i>iwet*</i>		corr. 28. (2)	/hiè:/hĩ:/hiě/
			corr. 38. (1)	/kiuè:/kiũ:/kiǒ/
49.	<i>ən*</i>		corr. 50. (6)	/then/
50.	<i>uən*</i>	velars	corr. 68. (9)	/kuen/
		others	corr. 50. (19)	/tshen/
51.	<i>in*</i>		corr. 63. (4)	/kin:/king:/kin/
52.	<i>iuən*</i>	<i>m*</i>	corr. 68. (5)	/uen/
		bilabial		
		stops	corr. 50. (4)	/fen/
		velars	corr. 72. (11)	/kiun:/kiung:/kiun/
53 a.	<i>iĕn*</i>	palatals	corr. 50. (15)	/tsen/
		others	corr. 63. (19)	/kin:/king:/kin/
53 b.	<i>iwĕn*</i>	no examples		
54.	<i>iuĕn*</i>	palatals	corr. 68. (4)	/tsuen/
		<i>l*</i>	corr. 50. (3)	/len/
		others	corr. 72. (1)	/kiun:/kiung:/kiun/
55.	<i>ien*</i>	no examples		
56.	<i>uat*</i>		corr. 9. (4)	/thù:/thũ:/thǔ/
			corr. 23. (1)	/hò:/hũ:/hǔ/
57.	<i>iət*</i>		corr. 27. (1)	/khiè:/khĩ:/khĩ/
58.	<i>iuət*</i>	<i>m*</i>	corr. 23. (2)	/ò:/ũ:/ũ/
		bilabial		
		stops	corr. 9. (3)	/fù:/fũ:/fǔ/
		velars	corr. 31. (1)	/khiò:/khiũ:/khiũ/
59.	<i>iĕt*</i>	palatals	corr. 12. (7)	/tsĩ:/tsĩ:/tsĩ/
		others	corr. 3. (12)	/mì:/mĩ:/mĩ/
			corr. 28. (2)	/kiè:/kĩ:/kiě/
60.	<i>iuĕt*</i>	palatals, <i>l*</i>	corr. 9. (2)	/lù:/lũ:/lǔ/
		<i>k*</i>	corr. 6. (1)	/kiù:/kiũ:/kiũ/
		<i>s*</i>	corr. 28. (1)	/hiè:/hĩ:/hiě/
			corr. 31. (1)	/hiò:/hiũ:/hiũ/
		<i>dz'*</i>	corr. 8. (2)	/sũ:/sũ:/sũ/
61.	<i>iĕt*</i>	<i>ś*</i>	corr. 14. (1)	/sè:/sǎ:/sǎ/

62 a.	<i>ang*</i>	<i>ts*, dz*, s*</i>	corr. 54. (9)	/sang/:/sang/:/suang/
		others	corr. 53. (22)	/tang/
62 b.	<i>wang*</i>	bilabials	corr. 53. (3)	/pang/
		velars	corr. 71. (7)	/huang/
63 a.	<i>iang*</i>	palatals	corr. 53. (23)	/tsang/
		supra-		
		dentals	corr. 71. (8)	/tsuang/
		others	corr. 65. (39)	/kiang/
63 b.	<i>iwang*</i>	<i>m*</i>	corr. 71. (3)	/uang/
		bilabial		
		stops	corr. 53. (6)	/fang/
		velars	corr. 71. (5)	/khuang/
64 a.	<i>ak*</i>	velars	corr. 24. (4)	/kò/:/kǒ/:/kǒ/
		others	corr. 22. (14)	/lò/:/lǒ/:/lǒ/
			corr. 20. (1)	/mǒ/:/mǒ/:/mǒ/
64 b.	<i>wak*</i>	<i>k*</i>	corr. 40. (1)	/kuè/:/kǔ/:/kuǎ/
			corr. 22. (1)	/hò/:/hǔ/:/hǒ/
65 a.	<i>iak*</i>	palatals	corr. 22. (4)	/tsò/:/tsǔ/:/tsǒ/
		<i>l*</i>	corr. 33. (2)	/liò/:/liǔ/:/liǒ/
		others	corr. 32. (10)	/kiò/:/kiǔ/:/kiǒ/
			corr. 60. (1)	/kiǎu/
65 b.	<i>iwak*</i>	no examples		
66 a.	<i>əng*</i>	bilabials	corr. 50. (1)	/pen/
			corr. 52. (1)	/phong/
		others	corr. 50. (9)	/ten/
66 b.	<i>wəng*</i>	no examples		
67.	<i>iang*</i>	palatals	corr. 50. (6)	/tshen/
		others	corr. 63. (7)	/hin/:/hing/:/hin/
68 a.	<i>ək*</i>	velars	corr. 15. (3)	/khè/:/khǒ/:/khǎ/
		others	corr. 14. (11)	/tè/:/tǎ/:/tǎ/
68 b.	<i>wək*</i>	<i>k*</i>	corr. 40. (1)	/kuè/:/kǔ/:/kuǎ/
			corr. 39. (1)	/huè/:/hǒ/:/hǒ/
69 a.	<i>iak*</i>	palatals	corr. 12. (5)	/tsì/:/tsǐ/:/tsǐ/
			corr. 11. (2)	/sǐ/:/sǐ/:/sǐ/
		supra-		
		dentals	corr. 14. (4)	/tshè/:/tshǎ/:/tshǎ/
		others	corr. 3. (4)	/kì/:/kǐ/:/kǐ/
			corr. 27. (2)	/hiè/:/hǐ/:/hǐ/
69 b.	<i>iwək*</i>	<i>j*</i>	corr. 31. (1)	/iò/:/iǔ/:/iǔ/
70 a.	<i>vng*</i>	bilabials	corr. 52. (3)	/mong/
			corr. 50. (1)	/phen/
		velars	corr. 63. (2)	/hin/:/hing/:/hin/
			corr. 50. (4)	/ken/
		others	corr. 50. (3)	/tshen/

70 b.	<i>wɔŋg*</i>		corr. 68. (1)	/huen/
70 c.	<i>ɨŋg*</i>	velars	corr. 63. (9)	/kin:/ /king:/ /kin/
70 d.	<i>ɨwɔŋg*</i>	bilabials	corr. 63. (5)	/pin:/ /ping:/ /pin/
			corr. 64. (1)	/hiong/
		<i>j*</i>	corr. 72. (1)	/iun:/ /iung:/ /iun/
71 a.	<i>ɛŋg*</i>	bilabials	corr. 52. (1)	/pong/
		velars	corr. 63. (2)	/in:/ /ing:/ /in/
			corr. 50. (3)	/ngen/
		others	corr. 50. (1)	/tsen/
71 b.	<i>wɛŋg*</i>		corr. 52. (1)	/hong/
72 a.	<i>ɨŋg*</i>	palatals	corr. 50. (11)	/tsen/
		others	corr. 63. (15)	/kin:/ /king:/ /kin/
72 b.	<i>ɨwǎŋg*</i>	<i>k*</i>	corr. 72. (1)	/khiun:/ /khiung:/ /khiun/
		zero	corr. 63. (1)	/in:/ /ing:/ /in/
73 a.	<i>iɛŋg*</i>		corr. 63. (24)	/tin:/ /ting:/ /tin/
73 b.	<i>iwɛŋg*</i>	no examples		
74 a.	<i>ɳk*</i>	velars	corr. 15. (4)	/kè:/ /kǒ:/ /kǎ/
		others	corr. 14. (11)	/phè:/ /phǎ:/ /phǎ/
74 b.	<i>wɳk*</i>	no examples		
74 c.	<i>ɨɳk*</i>	<i>ŋg*</i>	corr. 28. (1)	/ngiè:/ /lǐ:/ /liě/
75 a.	<i>ɛk*</i>	velars	corr. 15. (4)	/kè:/ /kǒ:/ /kǎ/
		others	corr. 14. (3)	/tsè:/ /tsǎ:/ /tsǎ/
75 b.	<i>wɛk*</i>	<i>m*</i>	corr. 14. (2)	/mè:/ /mǎ:/ /mǎ/
		<i>ɣ*</i>	corr. 39. (1)	/huè:/ /hǒ:/ /hǒ/
76.	<i>ɨǎk</i>	palatals	corr. 12. (4)	/tsǐ:/ /tsǎ:/ /tsǎ/
			corr. 10. (1)	/tsǐ/
		others	corr. 3. (6)	/kǐ:/ /kǐ:/ /kǐ/
			corr. 27. (2)	/phiè:/ /phǐ:/ /phǐ/
			corr. 34. (2)	/iò:/ /iǔ:/ /i/
			corr. 26. (1)	/iě:/ /i/ /iě/
77 a.	<i>iek*</i>		corr. 3. (9)	/pǐ:/ /pǐ:/ /pǐ/
			corr. 27. (3)	/liè:/ /lǐ:/ /lǐ/
77 b.	<i>iwɛk*</i>	no examples		
78.	<i>ǎŋg*</i>	bilabials	corr. 53. (1)	/pang/
		velars	corr. 65. (5)	/kiang/
			corr. 53. (5)	/kang/
		supra-		
		dentals	corr. 71. (1)	/suang/
			corr. 53. (1)	/tshang/
79.	<i>ǎk*</i>	velars	corr. 32. (5)	/kiò:/ /kiǔ:/ /kiǒ/
			corr. 24. (2)	/khò:/ /khǒ:/ /khǒ/
			corr. 22. (1)	/ò:/ /ǔ:/ /ǒ/
		others	corr. 22. (4)	/tshò:/ /tshǔ:/ /tshǒ/

80 a.	<i>ung*</i>		corr. 70. (1)	/uonɡ/
			corr. 52. (1)	/onɡ/
80 b.	<i>ɿung*</i>	others	corr. 52. (37)	/tonɡ/
		bilabials	corr. 52. (1)	/fonɡ/
		palatals, <i>l*</i>	corr. 52. (10)	/tsonɡ/
		velars	corr. 52. (3)	/konɡ/
			corr. 64. (3)	/khionɡ/
81.	<i>uonɡ*</i>		corr. 52. (7)	/tonɡ/
82.	<i>ɿwonɡ*</i>	bilabials	corr. 52. (5)	/fonɡ/
		palatals, <i>l*</i>	corr. 52. (6)	/tsonɡ/
		velars	corr. 64. (7)	/ionɡ/
			corr. 52. (4)	/konɡ/
83 a.	<i>uk*</i>		corr. 9. (11)	/phù:/ /phǔ:/ /phǔ/
			corr. 34 a. (2)	/khiò:/ /tshǔ:/ /tshǔ/
83 b.	<i>ɿuk*</i>	bilabials	corr. 9. (10)	/fù:/ /fǔ:/ /fǔ/
		palatals	corr. 9. (8)	/tsù:/ /tsǔ:/ /tsǔ/
		<i>s*</i>	corr. 34a. (1)	/hiò:/ /sǔ:/ /sǔ/
		velars	corr. 31. (3)	/iò:/ /iǔ:/ /iǔ/
			corr. 6. (1)	/kiù:/ /kiǔ:/ /kiǔ/
84.	<i>uok*</i>		corr. 9. (4)	/tù:/ /tǔ:/ /tǔ/
85.	<i>ɿwok*</i>	palatals, <i>l*</i>	corr. 9. (8)	/tshù:/ /tshǔ:/ /tshǔ/
			corr. 7. (1)	/tshû/
		<i>ts*</i> , <i>z*</i>	corr. 34 a. (3)	/hiò:/ /sǔ:/ /sǔ/
		velars	corr. 31. (3)	/khiò:/ /khiǔ:/ /khiǔ/
			corr. 6. (1)	/kiù:/ /kiǔ:/ /kiǔ/
86.	<i>uo*</i>		corr. 5. (2)	/iǔ:/ /iǔ:/ /iǔ/
			corr. 7. (48)	/ku/
		k'ü	corr. 8. (24)	/kǔ:/ /kǔ:/ /kǔ/
			corr. 20. (1)	/tshò:/ /tshǒ:/ /tshǒ/
			corr. 19. (2)	/mo/
87.	<i>ɿwo*</i>		corr. 9. (1)	/khù:/ /khǔ:/ /khǔ/
		palatals	corr. 7. (15)	/tsu/
		k'ü	corr. 8. (6)	/tsǔ:/ /tsǔ:/ /tsǔ/
		others	corr. 4. (14)	/kiu/
		k'ü	corr. 5. (8)	/kiǔ:/ /kiǔ:/ /kiǔ/
88.	<i>ɿu*</i>	palatals	corr. 7. (8)	/tsu/
		k'ü	corr. 8. (8)	/tsǔ:/ /tsǔ:/ /tsǔ/
		bilabials	corr. 7. (15)	/fu/
		k'ü	corr. 8. (7)	/fǔ:/ /fǔ:/ /fǔ/
		others	corr. 4. (7)	/kiu/
89.	<i>âu*</i>		corr. 5. (7)	/kiǔ:/ /kiǔ:/ /kiǔ/
			corr. 49. (47)	/pau/
90.	<i>au*</i>	velars	corr. 60. (8)	/kiau/
			corr. 49. (3)	/khau/

	others	corr. 49. (15)	/tshau/
91. <i>iäu*</i>	palatals	corr. 49. (10)	/tsau/
	others	corr. 60. (25)	/kiau/
92. <i>ieu*</i>		corr. 60. (12)	/liau/
93. <i>äu*</i>	bilabials	corr. 52. (4)	/mong/
		corr. 7. (3)	/mu/
	k'ü	corr. 8. (1)	/pǔ:/pǔ:/pǔ/
		corr. 20. (1)	/phǒ:/phǒ:/phǒ/
	others	corr. 48. (36)	/kou/
94. <i>iäu*</i>	bilabials	corr. 52. (1)	/fong/
	k'ü	corr. 8. (3)	/fǔ:/fǔ:/fǔ/
	palatals	corr. 48. (19)	/tsou/
		corr. 52. (2)	/tsong/
	others	corr. 59. (36)	/kiou/
94 b. <i>iäu*</i>		corr. 59. (1)	/iou/

GLOSSARY

The following short glossary contains syllables to which reference has been made in various compilations of idiomatic expressions. The study of the relevant material in these compilations was not undertaken until after the conclusion of the fieldwork and my informants have not been asked to identify items occurring in these works.

The quoted compilations include Yang Hiung's Fang yen¹⁾, Chang Ping-lin's Sin fang yen²⁾, Li Shī's Shu yǔ³⁾ and Chang Shen-yi's Shu fang yen⁴⁾. Most of the items listed below are quoted from either Li Shī's or Chang Shen-yi's compilations. Li Shī was a native of Swei-ning in Central Sīch'uan. His compilation is undated but the author is known to have passed the *tsin shī* examination in the year 1442. Chang Shen-yi refers in his preface to Li Shī: "Yang Hiung's Fang yen contains special idioms collected from various states and is not restricted to only one area. The practice of compiling monographs [of the special idioms] of one area started with Shu yǔ by Li Shī of the Ming dynasty".

¹⁾ Chou Tsu-mo and Wu Hiao-ling, Fang yen kiao tsien ki t'ung kien, K'o hūe ch'u pan she, Peking, 1956.

²⁾ Chang shī ts'ung shu ed.

³⁾ Han hai ts'ung shu ed.

⁴⁾ Ai yūan ts'ung shu ed.

方言校箋及通檢, 周祖謨校, 吳曉鈴編, 科學出版社, 1956
 章炳麟新方言, 章氏叢書.
 李實蜀語, 函海叢書
 張慎儀蜀方言, 愛園叢書

Li Shī and Chang Shen-yi were mainly concerned with tracing the origin of what they regarded as typical Sīch'uanese expressions. In some cases their etymologies and identifications are uncertain or even highly improbable.

In a majority of cases the pronunciations recorded in these compilations agree with the modern forms. In some cases, however, the modern forms deviate from readings recorded by Li Shī and Chang Shen-yi (cf items 1, 2, 4, 8 and 9 below).

Occasionally Li Shī's glosses afford evidence that certain sound transitions had occurred already before the mid 15th century (cf items 2 and 35-37).

In the following list the Anc. Ch. forms and their projections in the modern dialects have been given for each entry and also for each character, which in the quoted compilations have been employed to indicate the pronunciation of the entry word. The sign= means 'has the same sound as or is pronounced like'.

The lexical origin of such forms as do not obtain in Ts'ie yün or Kuang yün has been given after the Anc. Ch. forms. Reference to rime dictionaries other than Ts'ie yün, Kuang yün, Tsi yün and Yü p'ien have merely been quoted from K'ang hi tsī tien. (Cf. p. 188).

1. *dz'uâ** /tshò/ in a. /'ngâi-tshò-tshò-li/ 'short, of persons'; Li Shī 11 a. = b. *ts'â** /tshò/.
2. *luâ** /lò/ in a. /'lò-sī/ 'spiral-shelled snail'. Li Shī 42 a. = b. *nuâ** /lò:/lò:/lò/. This note indicates the lack of distinction, in the language of Li Shī, between *n* and *l*.
3. *luâ** /lò/ in a. /'lò-uèn/ 'whorls on the finger tips'. Li Shī 37 b. = b. *lâ** /lò/.
4. *γa:** (Tsi yün: *ḡa-**) /suâ:/sâ:/suâ/. Li Shī 44 a. indicates the pronunciation /sâ/, cf sub item 25. below. Chang Shen-yi has the variant character a. = b. *ṣa** /sâ/ 'k'ü sheng'.
5. *γa:** /hiä/; also *χək** /hè:/hă:/hă/. Li Shī 14 b. = a. *γa:** /hiä/, also = b. *χək** /hè:/hă:/hă/.
6. *îa** /tsâ/ in a. /tsâ-'khâi/ 'to open (one's mouth)'. Li Shī 40 a. = b. *dz'a** /tshà/, which syllable in Li Shī's language probably has unaspirated initial, cf sub item 7. below.
7. *tṣa:** /tsâ/ in a. /'tsâ-iù/ 'devilled fish'. Li Shī 8 b. = 6 b. *dz'a** /tshà/ 'shang sheng', cf sub item 6. above.
8. *ṣa:** (P'ien hai) /suâ:/sâ:/suâ/. Li Shī 43 b. = a. *ṣa:** /sâ/.
9. *tsiä:** /kiê:/kî:/kiê/. Li Shī 5 a. quotes the Shuo wen gloss: 'p'ing sheng = mother; shang sheng = elder sister'. No p'ing sheng derivation has been recorded in the modern dialects.
10. *zui-** /hiü:/hiü:/hiü/. Li Shī 11 b. = a. *süwäi-** /suëi/.
11. *mjwɛi:** /uêi/. Li Shī 13 b. = a. *i:** /î/.
12. *muäi-** /mî:/mî:/mî/ in a. /tâ'mî-thòu/ 'to dip one's head into water'. Li Shī 26 a. = b. *miei** /mî/ 'k'ü sheng'; the phrase /tâ'mi-thòu/ is recorded by Li Shī in the sense 'to dive into water'.

13. *tsuái*-* /tsuěi/; also /kiũ:/kiũ:/kiũ/ in a. /'kiu-tō/ 'at the most'. Chang Ping-lin 13 a. gives the spelling b. *dz'iu*-* as 'still prevailing in Sīch'uan'.
14. *ṣai**, *ṣái** /tsâi/ in a. /'tsâi-tsâi/ 'puppy'. Yang Hiung 10/61/4: 'child'. Ibidem, Kuo P'u's commentary: = b. *tsâi*:-* /tsâi/. Chang Ping-lin 87 b. 'the most frequently used abusive term in Ch'engtu and Ank'ing; in Ch'engtu pronounced like c. *tsâi** /tsâi/'. Li Shī 10 a. = b. *tsâi*:-* /tsâi/ 'child'. Chang Shen-yi I.5a.: 'small boy'.
15. *siwâi*-* /hiũ:/hiũ:/hiũ/. Li Shī 27 a. = a. *zui*-* /hiũ:/hiũ:/hiũ/. Cf sub item 10. above.
16. *miei*-* /mĩ:/mĩ:/mĩ/. Li Shī 26 a. = a. *mji*-* /mĩ:/mĩ:/mĩ/.
17. *ṣām** /ngân/. Li Shī 32 a. = a. *âm** /ngân/.
18. *nṣām** /ngiân:/liân:/liân/ 'sticky'; also /tsân/ 'to paste'. Li Shī 17 a. = a. *nien** /ngiân:/liân:/liân/ 'sticky, of rice'.
19. *tsăp* /tsà:/tsă:/tsă/. Li Shī 19 a. = a. *îăp** /tsà:/tsă:/tsă/ 'to wink'.
20. *ṣəm** /în:/îng:/în/ 'to drink; to water'. Li Shī 43 b. indicates k'ü sheng in the sense 'to water flowers and vegetables'. No k'ü sheng derivation has been recorded in the modern dialects.
21. *tsiəm*-* /khĩn:/khĩng:/khĩn/. The irregular aspiration is indirectly indicated by Li Shī 5 b., cf item 29. below.
22. *ṣiəp** /sĩ:/sĩ:/sĩ/. Li Shī 8 b. = a. *ṣi** /sĩ/ *sĩ*/.
23. *ân*-* /ngăn/. Li Shī 36 b. = a. *ân*-* /ngăn/ 'late in the day'.
24. *ṣăn** /iân/ 'to wither'. Li Shī 32 a. = a. *ṣăn** /iân/.
25. *ṣat** /sà:/să:/să/. Li Shī 44 a.: pronounced in k'ü sheng like a. *ṣa*-* (Tsi yü) /suâ:/sâ:/suâ/.
26. *tsiät** /tsè:/tsă:/tsă/ 'to break'; also /sè:/să:/să/ in a. /sè'pên/ 'to fail in business'. Chang Shen-yi I.5 a. = b. *dziät** /sè:/să:/să/ 'to fail in business'.
27. *d'uən*-* /tên/ 'a bin'. Li Shī 40 b. = a. *tuən*-* /tên/.
28. *ṣən** /în:/îng:/în/. Li Shī 43 b. = a. *ən** /ngên/ "shang sheng; an impediment". Ch has b. /ngên/, as in c. /ngô 'kiò-pêr 'ngên-tau la/ 'something is pressing against my footblade'.
29. *ts'ien** /khĩn:/khĩng:/khĩn/. Li Shī 5 b. notes that in the expression a.: 'two families united in marriage' the first syllable is pronounced in k'ü sheng. like b. *tsiəm** /khĩn:/khĩng:/khĩn/. Cf item 21. above.
30. *ṣi** /ĩ:/ĩ:/ĩ/. Li Shī 8 a. = a. *ṣi** /ĩ/.
31. and 32. *dz'iu** /sũ:/sũ:/sũ/. Li Shī 40 b. = a. *ṣiwok** /sũ:/sũ:/sũ/.
33. *dz'iak** /kiâu/ in a. /'huèi-kiâu/ 'to ruminate'. Li Shī 15 b. = b. *tsiäu*-* /kiâu/ 'to ruminate, of cows and sheep'.
34. *b'əng** /phòng/. Li Shī 40 b. = a. *b'ung* /phòng/.
35. *ɣvng** (P'ien hai) /hĩn:/hĩng:/hĩn/. Li Shī 41 a. = a. *ɣən** /hên/ 'to blow the nose with one's hand'.
36. *î'vng** /tshên/ 'to stretch out'; /tshên/ 'to support'. Li Shī 15 a. = a. *ts'uən** /tshên/ 'to stretch out'; also k'ü sheng, 'to support'.
37. *ɣvng** /sên/. Li Shī 34 a. = a. *ṣiəm*-* /sên/ 'to lay eggs'. No k'ü sheng derivation has been recorded in the modern dialects.

1. 矮 a.矮矮矮的 b.矮 2. 螺 a.螺蛳 b.螺 3. 膈 a.膈
文 b.羅 4. 厦 a.斥 b.沙 5. 嚇 a.吓 b.黑 6. 夢 a.夢
開 b.查 7. 鮮 a.鮮魚 8. 要 a.濃 9. 姐 10. 送 a.歲
11. 尾 a.己 12. 沒 a.打沒頭 b.迷 13. 最 a.最多 b.才句
切 14. 崽 a.崽崽 b.宰 c.哉 15. 總 a.送 16. 謎 a.寐
17. 淹 a.淹 18. 粘 a.年 19. 眨 a.割 20. 飲 21. 浸 22.
十 a.詩 23. 晏 a.按 24. 薦 a.馬 25. 殺 a.厦 26. 折 a.
折本 b.舌 27. 囤 a.頓 28. 隱 a.恩 b.硬 c.我腳板兒硬
到了 29. 親 a.親家 b.浸 30. 一 a.衣 31. 衙 32. 迷 a.
蜀 33. 嚼 a.回嚼 b.醺 34. 朋 a.蓬 35. 擗 a.狠 36. 撐
a.村 37. 生 a.滲 38. 孟 a.夢 39. 潑 a.歷 40. 虹 a.南
虹路 b.剛 c.絳 d.糶 41. 瘡 a.腔 42. 撻 a.聳 43. 觸 a.
杵 44. 鎔 a.育 b.遇 c.裕 45. 玉 46. 描 a.孤 b.枯 47.
跼 48. 暑 a.水 49. 女 a.他女了人沒得? b.御 50. 署 a.
樹 51. 鑄 a.到 52. 巫 53. 誣 a.烏 54. 癆 a.癆病 b.潑
c.勞 55. 鮑 a.報 56. 齣 a.齣牙 57. 猶 a.清 b.濁 58.
蹣 a.蹣起腳走 59. 够 a.構 60. 揪 a.酒 61. 肉

38. *məng*-* /mǒng/. Li Shī 11 b. = a. *mǐung*-* /mǒng/.
39. *liək** /liè:/ /lǐ:/ /lǐ/. Li Shī 36 a. = a. *liək** /lǐ:/ /lǐ:/ /lǐ/ 'to strain off liquid'.
40. *kāng*-* /kang/ 'rainbow'; also *yung** Ch /hòng/ in a. /'làn-hòng-lǚ/ 'South Rainbow Street'. Li Shī 40 b. = b. *kāng** /kāng/ k'ü sheng'. Li Shī 16 a. = c. *kāng*-* /kiǎng/. This character has by Li Shī also been employed to indicate the pronunciation of d. *g'iang*-* /kiǎng/.
41. *k'àng** /khiǎng/ 'to choke'. Chang Shen-yi I.10 a. = a. *k'àng** /khiǎng/ 'k'ü sheng'.
42. *sung** /sông/ 'to push'. Li Shī 33 a. = a. *sǐwong** /sông/ 'to push'. Chang Shen-yi I.10 b.: 'to push forward with one's hands'.
43. *tš'iwok** /tshû/. Li Shī 1 a. = a. *tš'iwok** /tshû/ 'to treat rudely'. This etymology is highly uncertain.
44. *iwok** /iũ:/ /iũ:/ /iũ/ 'to file off'. Li Shī 5 a.: 'formerly pronounced like a. *iwok** /iò:/ /iũ:/ /iũ/; now commonly pronounced like b. *ngǐu*-* /iũ:/ /iũ:/ /iũ/. Chang Shen-yi II.5 b. = c. *ǐu*-* /iũ:/ /iũ:/ /iũ/.
45. *ngǐwok** /iũ:/ /iũ:/ /iũ/. Li Shī 6 a. = 44 b. *ngǐu*-* /iũ:/ /iũ:/ /iũ/.

46. *kuo** /khū/. Li Shī 27 b. = a. *kuo** /kū/ 'to tie with bamboo splints'. Chang Shen-yi II.21 a.: 'formerly pronounced like a. *kuo** /kū/, now pronounced like b. *k'uo** /khū/'.
47. *k'uo** /khù:/khū:/khū/. Chang Shen-yi I.11 b.: 'formerly pronounced like 46 b. *k'uo** /khū/, now ju sheng'.
48. *śiwo:** /sû/. Chang Shen-yi II.24 a. = a. *świ:** /suēi/.
49. *ŋiwo:** /ŋgiû:/liû:/liû/ 'woman'; also /iũ:/iũ:/iũ/ 'to get engaged, of women', as in a. /thā'iũ la 'zèn me-te?/ 'is she engaged?'. Li Shī 5 a. = b. *ŋgiwo-** /iũ:/iũ:/iũ/ 'to give a daughter in marriage'. Chang Shen-yi I.5 a. quotes Li Shī and adds that this form is found in Northern Sīch'uan.
50. *śiwo-** /sũ:/sũ:/sũ/. Li Shī 40 b. = a. *śiu-** /sũ:/sũ:/sũ/.
51. *tśiu-** /tsũ:/tsũ:/tsũ/; also /tǎu/. Li Shī 46 a. = a. *tǎu-** /tǎu/.
52. and 53. *mǐu** /ũ/. Li Shī 40 b. = a. *uo** /ũ/.
54. *lǎu-** /lǎu/; also /làu/ in a. /làu-pǐn/ 'consumption; T. B.' Yang Hiung 3/20/12 'to poison'. Li Shī 15 a. = b. /lǎu/ 'to poison'. Chang Shen-yi I.14 a. = c. *lǎu** /làu/ 'consumption'; also k'ũ sheng, 'to poison'.
55. *pau-** /pǎu/. Li Shī 25 b. = a. *pǎu-** /pǎu/ 'a plane'.
56. *b'au** (Yü p'ien) /pǎu/ in a. /'pǎu-ià/ 'protruding teeth'. Li Shī 3 a. = 55 a. *pǎu-** /pǎu/ 'protruding teeth'.
57. *mau** /mǎu/. Li Shī 3 b.: 'pronounced *mao* either in the first or the second tone' (*mao ts'ing cho liang hu*). It is interesting to note that Li Shī here employs the traditional phonological terms a. *ts'ing* and b. *cho*, normally referring to the absence or presence of voice in initials, as a means of distinguishing the first and the second tone.
58. *k'ǎu-** /khiǎu/ in a. /'khiǎu-khi'kiò 'tsôu/ 'to walk on one's heels, like women with bound feet'. Chang Shen-yi I.11 b.: 'to lift the feet'.
59. *kǎu** /kǒu/. Li Shī 6 a. = a. *kǎu-** /kǒu/.
60. *tsǐǎu** /kiǒu/ 'to seize'; also /kiôu/ 'to wring'. Chang Shen-yi I.10 b. = a. *tsǐǎu:** /kiôu/ 'p'ing sheng, 'to seize tightly with one's hand'.
61. *ŋǐǎu-** /zǒu/; also *ŋǐǎuk** /zù:/zũ:/zũ/. Li Shī 21 b. indicates k'ũ sheng.

LIST OF FORMS WITH MORE THAN ONE PRONUNCIATION

1. *γuǎ** /hò/, as in a. /'hò-khī/ 'amiable'; also /hǒ/ 'to mix'.
2. *ts'ǎa:** 0 /khiē/ and /tshê/, which latter form points to Anc. Ch. *ts'ǎa:**.
3. *lǐ:** /lǐ/, Ch. also /i/ in a. /'i-thou/ 'inside'.
4. *tświ** /tsuēi/ 'an awl'; also /kiũ/ 'to sting, to prick'.
5. *d'ái** /thài/ 'to carry'; also /thāi/ 'to lift'.
6. *dz'ái:** /tsǎi/; also /tǎi/, especially as coverb and postverb.
7. *γuǎi-** /huěi/ 'know how to'; also *kuǎi-** /khuǎi/ in a. /'khuǎi-kǐ/ 'accountant'.
8. *kǎi** 0 /kǎi/ 'all'; also /tsāi/ in a. /'kiũ-tsāi/ 'all'.

9. *·ăi:** /ngâi/ 'to suffer', as in a. /ngô'păng ngi ngâi 'tâ/ 'I had to take the beating for you'; also /ngâi/ 'to be near', as in b. Ch /'ngâi-tau ngo 'tsô/ 'sit next to me'.
10. *tş'ai-** /tshă/ in a. /'tshă-tsī/ 'a slit in a dress'; also /tshâ/ in b. /'tshâ-tshâ-khŭ/ 'childrens' pants, open behind'.
11. *yai:** /hâi/ in a. /'phàng-hâi/ 'crab'; reading pronunciation /hiăi/.
12. *kuăn** /kuăn/ 'crown'; also /kuăn/ in a. /'kuăn-tsê/ 'a married man'.
13. *yuan** /uân/ 'pill', also /iuân/ in a. /'iuân-tsī/ '(meat) ball'.
14. *kăn** /kiăn/ as in a. /'tsōng-kian/ 'in the middle'; also /kăn/ in b. /'fàng-kăn/ 'room'.
15. *tsiăn** /kiăn/ 'to fry'; also /kiăn/ 'to melt (wax)'.
16. *ziwăn** /hiuân/, as in a. /'hiuân-tsuân/ 'to turn in a circle'; also tone 4 in b. /'hiuân-fōng/ 'whirl-wind'.
17. *i'iwăn:** /tsuân/ 'to return'; also *tiwăn-** /tsuân/ 'to revolve'.
18. *k'iwăn** /khiuân/ 'a circle'; also *g'iwăn:** /kiuân/ in a. /'mâ-kiuân/ 'a stable'.
19. *j'iwăn-** /uân/ in a. /'i-uân/ 'hospital'; also /iuân/ in b. /'iuân-tsī/ 'court-yard'.
20. *χăt** /hò:/ /hŭ:/ /hŏ/, as in a. /tshĭ-hò/ 'food and drink'; Ch also /hŏ/ 'to drink; to cheat'.
21. *muăt** /mà:/ /mă:/ /mă/ 'to dust'; also /mô/ 'to rub on, as powder or paint'; cf also a. /mô 'kîn-tsī/ 'to cut one's throat'.
22. *ts'uat** /tshò:/ /tshŭ:/ /tshŏ/ 'to gather together'; also /tsò:/ /tsŭ:/ /tsŭ/ 'to pinch'.
23. *puăt** /pà:/ /pă:/ /pă/ 'eight'; O also tone 2 in a. /'pà-pă/ '800'.
24. *·wat** /uâ/ 'to dig'; also /uâ/ 'to scope put'.
25. *ngiwt** Ch /iuē/ in a. /'iuē-khi/ 'to bend'; also tone 2 in b. /tâ 'iuē la/ 'it has been bent'.
26. *yuan** /huēn/ 'muddy'; also tone 2 in a. /huèn-sēn/ 'the whole body'. This character is also used for /khuèn/ 'whole, undivided'.
27. *j'iuən-** /iŭn:/ /iŭng:/ /iŭn/ 'to feel dizzy'; also /huēn/ 'to faint'.
28. *siĕn** /tshēn/ 'to stretch out'; also /sēn/ in a. /sēn'iuân/ 'to redress a grievance'.
29. *muət** /mò:/ /mŭ:/ /mŏ/ in a. /mò-iôu/ 'have not'; /mè:/ /mă:/ /mă/ in b. /mè-tè:/ /mă-tă:/ /mă-tă/ 'have not'; Ch also /mêi/ in c. /mêi-iôu/; for /mĭ:/ /mĭ:/ /mĭ/ deriving from Anc. Ch. *muĕi-** see Glossary, item 12.
30. *·nĕiĕt** /zĭ:/ /zĭ:/ /zĭ/ 'sun'; Ch also /èr/ in a. /'hiăng-èr-khuèi/ 'sun-flower'.
31. *p'iwang** /fāng/ 'to hinder'; also tone 2 in a. /ù'fàng/ 'never mind'.
32. *ziang** /hiăng/ 'image'; /khiăng/ 'to resemble'.
33. *xiang** /hiăng/ 'fragrant'; /hiăng/ 'to add condiments to food'.
34. *d'ək** /thè:/ /thă:/ /thă/, as in a. Ch /'thè-ĭ/ 'on purpose'. Ch also /thiè/ in b. /'thiè/-piè 'special'.
35. *dz'ək** /tsè:/ /tsă:/ /tsă/ 'thief'; Ch also /tsuèi/ in a. /'tsuèi-uà-tsī/ 'petty thief'.
36. *piək** /pi:/ /pĭ:/ /pĭ/ 'to force'; Ch also /piē/ in a. /'piē-tau/ 'to compel'.

1. 和 a. 和氣 2. 且 3. 裡 a. 裡頭 4. 錐 5. 播
6. 在 7. 會 a. 會計 8. 皆 a. 具皆 9. 挨 a. 我幫你挨
打 b. 挨到我坐 10. 衩 a. 衩子 b. 衩衩褲 11. 蟹 a. 螃蟹
12. 冠 a. 冠者 13. 丸 a. 丸子 14. 間 a. 中間 b. 房間 15. 前
16. 旋 a. 旋轉 b. 旋風 17. 轉 18. 圈 a. 馬圈 19. 院
a. 醫院 b. 院子 20. 喝 a. 吃喝 21. 抹 a. 抹頸子 22. 撮
23. 八 a. 八百 24. 挖 25. 扞 a. 扞起 b. 打扞了 26. 渾 a.
渾身 27. 暈 28. 伸 28a. 伸冤 29. 沒 a. 沒有 b. 沒得
30. 日 a. 向日葵 31. 妨 a. 無妨 32. 傢 33. 香 34. 特 a.
特意 b. 特別 35. 賊 a. 賊娃子 36. 逼 a. 逼到 37. 更
38. 杏 a. 杏仁兒 b. 杏子 39. 櫻 a. 櫻桃 b. 櫻花 40. 正 a.
正月 41. 膈 a. 扯膈燈兒 b. 打膈 42. 的 43. 角 44. 聾
a. 他耳朵聾了 b. 聾子 45. 籠 46. 都 a. 成都 47. 肚 a.
腳肚子 48. 去 49. 倒 50. 撈 a. 把衣裳撈起 51. 造 a.
造孽 52. 掉 53. 後 a. 後頭 54. 這 55. 歪 a. 歪起得
56. 怎 a. 怎麼? b. 怎個 57. 哄 58. 攔 a. 攔攔

37. *kong** /kēn/ 'to change'; also *kong** /kēn/ 'still more'.
38. *ɣɔŋ** /hēn/ in a. /'hēn-zér/ 'almonds'; /hín/ in b. /'hín-tsī/ 'apricots'.
39. *ɛŋg** /ngēn/ in a. /'ngēn-thàu/ 'cherries'; also /in/ /ĩng/ /ĩn/ in b. Ch /'in-huā/ 'cherry blossom'.
40. *tšjäng** /tsēn/, as in a. Ch /'tsēn-iuè/ 'the first lunar month'; *tšjäng** /tsēn/ 'to correct'.
41. *kək** /kè:/ /kǒ:/ /kǎ/, as in a. Ch /tshè 'kè-tēr/ 'to hiccough' Ch also /kè/ in b. /tâ 'kê/ 'to belch'.
42. *tiək** /tì:/ /tĩ:/ /tĩ/ 'a bull's eye'; also /li/ 'subordinative particle'.
43. *kák** /kò:/ /kǒ:/ /kǒ/ 'horn'; /kiò:/ /kiũ:/ /kiǒ/ 'ten cents'.
44. *lung** /lòng/ in a. Ch /thā 'ēr-to 'lòng la/ 'he is deaf'; also tone 1 in b. /'lǒng-tsī 'a deaf person'.
45. *lung**, *lung** /lòng/ 'a cage'; /lǒng/ 'an eel trap'.
46. *tuo** /tū/, as in a. /'tshèn-tū/ 'Chengtu'; also /tōu/ 'all'.
47. *d'uo** /tũ:/ /tũ:/ /tũ/ 'stomach'; *tuo** /tũ/ 'animal stomach, as dish'; Cf also Ch a. /'kiò-tũ-tsī/ 'the calf of the leg'.
48. *k'ivo** /khiũ:/ /khiũ:/ /khiũ/ 'to go away'; also /khiě:/ /khĩ:/ /khiě/.
49. *táu** /tāu/ 'to fall'; *táu** /tǎu/ 'to turn, to reverse'.
50. *láu** /làu/ 'to take out of water'; also /lāu/ as in a. Ch /pâ 'ĩ-sàng 'lāu-khi/ 'hold up your dress'.

51. *dz'âu*-* /tshǎu/ 'to make, to create'; also /tsǎu/ in a. Ch. /'tsǎu-ngiè/ 'unlucky'.
52. *d'ieu*-* /tiǎu/ 'to drop, to fall'; also /thiâu/ 'to exchange'.
53. *γəu*:-* /hǒu/ in a. /'hǒu-thou/ 'behind'; also tone 1 in Ch. a. /'hǒu-thou/ 'inside'.
54. *tsia*-* (?) /tsě:/ /tsěi:/ /tsě/; Ch also /kiě/.
55. /uāi/ 'wicked'; /uâi/ in a. /'uâi-khi-te/ 'on the slant'.
56. /tsên/ in a. /'tsên-mo?/ 'how?'; also /tsà:/ /tsǎ:/ /tsǎ/ in b. /'tsà-ko?/ 'how'.
57. /hǒng/ 'to drive away'; also /hông/ 'to cheat'.
58. /khǒ:/ /khǒ:/ /khǒ/ 'to put, to place'; also /kò:/ /kǒ:/ /kǒ/ in a. /'tân-kò/ 'to delay'.

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